

Variable Annuity Guaranteed Living Benefits Utilization

2014 EXPERIENCE

A Joint Study
Sponsored by the
Society of Actuaries
and LIMRA



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Contents

Acknowledgements	16
About the Study.....	17
Executive Summary	19
Chapter One: Guaranteed Lifetime Withdrawal Benefits	35
Buyer and Owner Profiles	36
Buyers by Age	40
Source of Funds.....	41
Ownership of IRA and Nonqualified Annuities.....	44
GLWB Owner and Contract Characteristics	45
Benefit Base.....	48
Benefit Base by Quarter and Year of Issue	50
Benefit Base to Contract Value Ratios by Age.....	55
Benefit Base for Contracts With Withdrawals vs. Without Withdrawals.....	58
Withdrawal Benefit Utilization	60
Utilization.....	60
Overall Utilization for Contracts Issued Before 2014	61
Withdrawal Activity by Source of Funds	64
Taking First Withdrawals.....	68
Taking First Withdrawal From IRA Annuity in 2014.....	68
Taking First Withdrawal From Nonqualified Annuity in 2014	71
Possible Effect of Potential Step-Ups in Guaranteed Annual Withdrawal Rates on First withdrawal Activity	73
First Withdrawal Activity for IRA Contracts Issued in 2007	74
First Withdrawal Activity for Nonqualified Contracts Issued in 2007	78
Systematic Withdrawal Activity	82
First Withdrawals Through SWPs for IRA Contracts Issued in 2007	85
First Withdrawal Through SWPs for Nonqualified Contracts Issued in 2007	88
Percentage of Benefit Maximum Withdrawn	89
Withdrawal Activity by Duration.....	96
Withdrawal Activity by Duration and Age	99
Withdrawals in Contracts With Non-Withdrawal Incentives	101
Average Withdrawal Amounts	103
Withdrawals as a Percentage of Contract Value and Benefit Base	104
Total Withdrawal Amount vs. Total Contract Value	106
Withdrawal Activity in Single- and Joint-Lives Contracts.....	108
Withdrawal Activity by Channel	110
In-the-Money Analyses.....	111
Withdrawal Activity for Contracts In-the-Money or Not-in-the-Money	112
Withdrawal Activity for Contracts Issued in 2014	118
Utilization by Selected Characteristics.....	119
GLWB Actuarial Present Value of Future Payments.....	121
Additional Premium and Net Flows.....	123
Persistency.....	126
Surrender Activity by Share Class and Presence of Surrender Charge.....	128
Surrender Activity of Owners Taking Withdrawals	130
Surrender Activity by Percentage of Annual Benefit Maximum Withdrawn	134
Surrender Activity by Owners Taking Systematic Withdrawals	136

Surrender Activity Based on the Amount the Benefit Base Exceeds Contract Value	138
Product and Benefit Characteristics	143
Chapter Two: Guaranteed Minimum Withdrawal Benefits	149
GMWB Owner and Contract Characteristics.....	150
Benefit Base Balance.....	152
Benefit Base Balance for Contracts With Withdrawals vs. Without Withdrawals	153
Benefit Base Balance to Contract Value Ratios by Age.....	154
Withdrawal Activity	156
Overall Utilization for Contracts Issued Before 2014	156
Withdrawal Activity by Source of Funds	157
Taking First Withdrawals.....	160
Taking First Withdrawal From IRA Annuity in 2014.....	161
Taking First Withdrawal From Nonqualified Annuity in 2014	162
First Withdrawal Activity for Contracts Issued in 2007.....	162
Systematic Withdrawal Activity.....	164
Percentage of Benefit Maximum Withdrawn.....	167
Withdrawal Activity by Duration	175
Average Withdrawal Amounts.....	176
Withdrawals as a Percentage of Contract Value and Benefit Base Balance	178
Ratio of Withdrawal to Contract Value and Benefit Base Balance	180
Ratio of Withdrawal Amount to Contract Value	180
Withdrawal Activity in Contracts Where the Benefit Base Balance Exceeded the Contract Value ...	182
Utilization by Select Characteristics.....	186
Additional Premium and Net Flows.....	188
Persistency.....	190
Surrender Activity of Owners Taking Withdrawals	190
Surrender Activity by Share Class and Presence of Surrender Charge.....	193
Surrender Activity by Percentage of Benefit Maximum Withdrawn.....	196
Surrender Activity by Owners Taking Withdrawals by Withdrawal Method	198
Product and Benefit Characteristics	202
Chapter Three: Guaranteed Minimum Income Benefits	207
Owner Profiles	208
Source of Funds and Ownership of GMIBs	208
GMIB Owner and Contract Characteristics	209
Benefit Base.....	211
Benefit Bases by Quarter and Year of Issue.....	212
Benefit Base to Contract Value Ratios by Age.....	216
Benefit Base for Contracts With Withdrawals vs. Without Withdrawals.....	218
In-the-Money.....	218
GMIB Benefit Calculation Methods	223
Annuitization.....	224
Contracts With Benefit Maturities in 2013 or 2014	225
Withdrawal Activity	229
Withdrawals	229
Overall Withdrawals From Contracts Issued Before 2014.....	230
Withdrawal Activity by Benefit Reduction Methods.....	230
Withdrawal Activity by Source of Funds	231
First Withdrawals	235
First Withdrawal From IRA Annuity in 2014.....	236
First Withdrawal From Nonqualified Annuity in 2014.....	238

First Withdrawal Activity for IRA Contracts Issued in 2008	240
First Withdrawal Activity for Nonqualified Contracts Issued in 2008.....	242
Systematic Withdrawal Activity.....	244
Percentage of Maximum Annual Benefit Withdrawn.....	246
Withdrawal Activity by Duration.....	253
Withdrawal Activity by Duration and Age	255
Withdrawal Amount as a Percentage of Contract Value	256
Ratio of Withdrawal to Contract Value and to Benefit Base (for Contracts With Withdrawals Only).....	257
Ratio of Withdrawal Amount to Contract Value	258
Withdrawal Activity for GMIB Contracts In-the-Money or Not-in-the-Money	260
Withdrawals by Selected Characteristics	264
Additional Premium and Net Flows.....	265
Persistency.....	267
Surrender Activity by Share Class	268
Surrender Activity of Owners Who Take Withdrawals.....	270
Surrender Activity by Percentage of Annual Benefit Maximum Withdrawn	273
Surrender Activity of Owners Taking Systematic Withdrawals	274
Surrender Activity by Amount the Benefit Base Exceeded the Contract Value	277
Surrender Activity by GMIB Benefit Maturity Year	279
Chapter Four: Guaranteed Minimum Accumulation Benefits	285
Owner Profiles	286
Ownership of IRA and Nonqualified GMAB Annuities	286
GMAB Owner and Contract Characteristics.....	288
Benefit Base.....	290
Benefit Base by Quarter and Year of Issue	291
Benefit Base for Contracts With Withdrawals vs. Without Withdrawals.....	295
Benefit Base to Contract Value Ratios by Age.....	297
GMAB Benefit Calculation Method.....	298
Benefit Maturity	299
Benefit Maturity of GMAB Contracts	299
Year of Benefit Maturity	300
Withdrawal Activity	302
Withdrawal Activity by Source of Funds	303
Average Amount of Withdrawals	305
Systematic Withdrawal Activity.....	306
Additional Premium and Net Flows.....	307
Persistency.....	308
Surrender Activity by Share Class and Surrender Charge.....	309
Surrender Activity by Owners Who Took Withdrawals.....	312
Surrender Activity by Amount the Benefit Base Exceeded the Contract Value	316
Product and Benefit Characteristics	320
Participating Companies.....	323
Appendix A: About the Survey.....	324
Appendix B	326
Appendix C	353
Related Links	356

Figures

Figure 1-1:	GLWB Buyers by Age at Time of Purchase, 2011–2014.....	37
Figure 1-2:	Percentage of GLWB Buyers Over and Under Age 60 at Time of Purchase.....	38
Figure 1-3:	New GLWB Buyers in 2014 by Age	40
Figure 1-4:	GLWB Contracts by Source of Funds.....	41
Figure 1-5:	GLWB Ownership by Sources of Funds and Age Groups	44
Figure 1-6:	S&P 500 Index, January – December 2014.....	48
Figure 1-7:	GLWB Median Contract Value vs. Benefit Base, BOY 2014	51
Figure 1-8:	GLWB Benefit Base to Contract Value, BOY 2014.....	52
Figure 1-9:	GLWB Median Contract Value vs. Benefit Base, EOY 2014.....	53
Figure 1-10:	GLWB Benefit Base to Contract Value, EOY 2014	54
Figure 1-11:	GLWB Average Contract Values and Benefit Bases at BOY, on Anniversary Date, and at EOY 2014	55
Figure 1-12:	GLWB Benefit Base to Contract Value Ratios by Age — at BOY 2014	56
Figure 1-13:	GLWB Benefit Base to Contract Value Ratios by Age — at EOY 2014	57
Figure 1-14:	GLWB Average Contract Values and Benefit Bases for Contracts Without Withdrawals in 2014.....	58
Figure 1-15:	GLWB Average Contract Value and Average Benefit Base for Contracts With Withdrawals in 2014.....	59
Figure 1-16:	GLWB Overall Utilization of Withdrawals	61
Figure 1-17:	GLWB Utilization by Source of Funds and Age of Owners.....	64
Figure 1-18:	GLWB Utilization by IRA Owners.....	65
Figure 1-19:	GLWB Utilization by Owners With Nonqualified Funds.....	67
Figure 1-20:	GLWB First Withdrawals in 2014 (IRA Contracts Only)	69
Figure 1-21:	GLWB First Withdrawals in 2014 (Nonqualified Contracts Only).....	71
Figure 1-22:	Percentage of Nonqualified Owners Taking First Withdrawal in 2014.....	72
Figure 1-23:	Percentage of Owners Taking First Withdrawals in 2014 Based on Proximity to Potential Annual Withdrawal Rate Increase	74
Figure 1-24:	GLWB Withdrawals With SWPs	82
Figure 1-25:	GLWB Actual Withdrawals as a Percentage of Benefit Maximum	90
Figure 1-26:	GLWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age ..	91
Figure 1-27:	GLWB Withdrawals to Annual Benefit Maximum Amount by Age	93
Figure 1-28:	GLWB Withdrawals to Benefit Maximum Amount by Age, Contract Sizes Under \$100,000.....	95
Figure 1-29:	GLWB Withdrawals to Benefit Maximum Amount by Age, Contract Sizes \$100,000 to \$249,999.....	95
Figure 1-30:	GLWB Withdrawals to Benefit Maximum Amount by Age, Contract Sizes \$250,000 or More.....	96
Figure 1-31:	GLWB Overall Utilization Rates by Contract Duration	97
Figure 1-32:	GLWB Overall Utilization Rates by Contract Duration and Source of Funds.....	98
Figure 1-33:	GLWB Overall Utilization Rates by Contract Duration and Current Owner Age.....	99
Figure 1-34:	GLWB Withdrawal Activity in Contracts With/Without Non-Withdrawal Incentives	102
Figure 1-35:	GLWB Amount of Withdrawals by Owners’ Current Age.....	103
Figure 1-36:	GLWB Withdrawals to Average Contract Value Ratio (For Contracts With Withdrawals Only)	104
Figure 1-37:	GLWB Withdrawals to Average Benefit Base Ratio (For Contracts With Withdrawals Only)	105
Figure 1-38:	GLWB Total Withdrawals to Total Contract Value (All Contracts)	106
Figure 1-39:	GLWB Total Withdrawals to Total Contract Value (For Contracts With Withdrawals Only)	107
Figure 1-40:	GLWB Withdrawal Rates for Single- and Joint-Lives IRA Contracts	108
Figure 1-41:	GLWB Withdrawal Rates for Single- and Joint-Lives Nonqualified Contracts.....	109

Figure 1-42: GLWB Withdrawal Rates by Distribution Channels	110
Figure 1-43: GLWB Withdrawal Rates for Contracts In-the-Money vs. Not In-the-Money	113
Figure 1-44: GLWB Withdrawal Rates for Contracts by Degree of In-the-Money vs. Not In-the-Money.....	114
Figure 1-45: GLWB Average Actuarial Present Value (APV) vs. Average Contract Value by Age at EOY 2014	121
Figure 1-46: GLWB Ratio of APV at 4.00% to Contract Value Distribution by Age	123
Figure 1-47: GLWB Percentage of Contracts Receiving Additional Premium	124
Figure 1-48: GLWB Percentage of Contracts Receiving Additional Premium by Size of Contract ..	124
Figure 1-49: Additional Premium for Contracts Issued in 2007	125
Figure 1-50: GLWB Surrender Rate by Quarter of Contract Issue	127
Figure 1-51: GLWB Contract Surrender Rates in 2014 by Share Classes.....	128
Figure 1-52: GLWB Cash Value Surrender Rates in 2014 by Share Classes	128
Figure 1-53: GLWB Contract Surrender Rate by Surrender Charge Percentage	129
Figure 1-54: GLWB Cash Value Surrender Rate by Surrender Charge Percentage.....	130
Figure 1-55: GLWB Contract Surrender Rate by Owners Taking Withdrawals in 2014.....	131
Figure 1-56: GLWB Contract Surrender Rate by Owners Taking Withdrawals Before 2014	132
Figure 1-57: GLWB Cash Value Surrender Rate by Owners Taking Withdrawals in 2014	133
Figure 1-58: GLWB Cash Value Surrender Rate by Owners Taking Withdrawals Before 2014	133
Figure 1-59: GLWB Contract Surrender Rates by Owners Taking 2014 Withdrawals in Relation to Benefit Maximum Allowed	134
Figure 1-60: GLWB Cash Value Surrender Rates by Owners Taking 2014 Withdrawals in Relation to Benefit Maximum Allowed	136
Figure 1-61: GLWB Contract Surrender Rates by Withdrawal Methods	137
Figure 1-62: GLWB Cash Value Surrender Rates by Withdrawal Methods	138
Figure 1-63: GLWB Contract Surrender Rate by Amount Benefit Base Exceeds Contract Value..	138
Figure 1-64: GLWB Cash Value Surrender Rate by Amount Benefit Base Exceeds Contract Value	139
Figure 2-1: GMWB Average Contract Value and Benefit Base Balance for Contracts Without Withdrawals	153
Figure 2-2: GMWB Average Contract Value and Benefit Base Balances for Contracts With Withdrawals.....	154
Figure 2-3: GMWB Benefit Base Balance to Contract Value Ratios by Age — at BOY 2014	155
Figure 2-4: GMWB Benefit Base Balance to Contract Value Ratios by Age — at EOY 2014.....	155
Figure 2-5: GMWB Overall Utilization of Withdrawals.....	156
Figure 2-6: GMWB Utilization by Source of Funds and Age of Owners.....	157
Figure 2-7: GMWB Contracts Funded by Qualified Savings	158
Figure 2-8: GMWB Withdrawals by IRA Owners.....	159
Figure 2-9: GMWB Withdrawals by Nonqualified Owners	160
Figure 2-10: GMWB First Withdrawals in 2014 From Contract Issued in 2006 (IRA Contracts Only)	161
Figure 2-11: GMWB First Withdrawals in 2014 From Contract Issued in 2006 (NQ Contracts Only)	162
Figure 2-12: GMWB Owners Taking Withdrawals With SWPs	165
Figure 2-13: GMWB Actual Withdrawals as a Percentage of Maximum Annual Benefit Amount	168
Figure 2-14: GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age	169
Figure 2-15: GMWB Withdrawals to Maximum Annual Benefit Amount by Age	171
Figure 2-16: GMWB Withdrawals to Maximum Annual Benefit Amount by Age, Contracts Less Than \$100,000.....	173
Figure 2-17: GMWB Withdrawals to Maximum Annual Benefit Amount by Age, Contracts \$100,000 or More.....	173

Figure 2-18:	GMWB Overall Utilization Rates by Contract Duration	175
Figure 2-19:	GMWB Amount of Withdrawals by Owner's Current Age.....	177
Figure 2-20:	GMWB Withdrawals to Average Contract Value Ratio (For Contracts With Withdrawals Only)	178
Figure 2-21:	GMWB Withdrawals to Average Benefit Base Balance Ratio (For Contracts With Withdrawals Only)	179
Figure 2-22:	GMWB Withdrawal Amount to Average Contract Value and Benefit Base Balance.....	180
Figure 2-23:	GMWB Total Withdrawals to Total Contract Value (All Contracts)	181
Figure 2-24:	GMWB Total Withdrawals to Total Contract Value (for Contracts With Withdrawals Only)	182
Figure 2-25:	GMWB Withdrawal Rates for Contracts Where the Benefit Base Balance Exceeded the Contract Value.....	184
Figure 2-26:	GMWB Percentage of Contracts Receiving Additional Premium by Size of Contract.....	188
Figure 2-27:	GMWB Contract Surrender Rates by Owners Taking Withdrawals in 2014.....	190
Figure 2-28:	GMWB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014	191
Figure 2-29:	GMWB Contract Surrender Rates by Owners Who Took Withdrawals Before 2014	192
Figure 2-30:	GMWB Cash Value Surrender Rates by Owners Who Took Withdrawals Before 2014	192
Figure 2-31:	GMWB Contract Surrender Rates in 2014 by Share Classes.....	193
Figure 2-32:	GMWB Cash Value Surrender Rates in 2014 by Share Classes	194
Figure 2-33:	GMWB Contract Surrender Rate in 2014 by Surrender Charge Percentage.....	194
Figure 2-34:	GMWB Cash Value Surrender Rate in 2014 by Surrender Charge Percentage	195
Figure 2-35:	GMWB Contract Surrender Rates by Owners Who Took 2014 Withdrawals, in Relation to Annual Benefit Maximum Allowed.....	196
Figure 2-36:	GMWB Cash Value Surrender Rates by Owners Who Took 2014 Withdrawals, in Relation to Annual Benefit Maximum Allowed.....	197
Figure 2-37:	GMWB Contract Surrender Rates by Withdrawal Method	198
Figure 2-38:	GMWB Cash Value Surrender Rates by Withdrawal Method.....	199
Figure 3-1:	GMIB Ownership of Annuity by Sources of Funds and Age Groups	208
Figure 3-2:	GMIB Median Contract Value vs. Median Benefit Base, BOY 2014	212
Figure 3-3:	GMIB Benefit Base to Contract Value Inter-Quartile Range, BOY 2014.....	213
Figure 3-4:	GMIB Contract Value and Benefit Base, EOY 2014	214
Figure 3-5:	GMIB Benefit Base to Contract Value Inter-Quartile Range, EOY 2014.....	215
Figure 3-6:	GMIB Average Contract Value and Average Benefit Base Values	215
Figure 3-7:	GMIB Benefit Base to Contract Value Ratios by Age — BOY 2014.....	216
Figure 3-8:	GMIB Benefit Bases to Contract Value Ratios by Age — EOY 2014.....	217
Figure 3-9:	GMIB Average Contract Value, Average Benefit Base for Contracts Without Withdrawals	218
Figure 3-10:	Ratio of GMIB Payout to SPIA Payout, for Life-Only Payouts by All Benefit Maturity Years.....	220
Figure 3-11:	Ratio of GMIB Payout to SPIA Payout, for Life With 10-Year Period-Certain Payouts by all Benefit Maturity Years.....	221
Figure 3-12:	Ratio of GMIB Payout to SPIA Payout, for Life-Only Payouts by Benefit Maturity Years 2014 or Earlier	222
Figure 3-13:	Ratio of GMIB Payout to SPIA Payout, for Life With 10-Year Period-Certain Payouts by Benefit Maturity Years 2014 or Earlier	222
Figure 3-14:	GMIB Calculation Methods.....	223
Figure 3-15:	GMIB Percentage of Contracts by Roll-Up Rates.....	223
Figure 3-16:	GMIB Contracts Annuitized in 2014, by Benefit Maturity	225
Figure 3-17:	GMIB Contracts Annuitized in 2014, by Age and Contract Size	226

Figure 3-18: GMIB Contracts Annuitized in 2014 With Benefit Maturity Date in 2013 or 2014, by Age and BOY 2014 BB/CV Ratio.....	227
Figure 3-19: GMIB Percentage of Contracts With Withdrawals	230
Figure 3-20: GMIB Percentage of Contracts With Withdrawals, by Source of Funds and Age of Owners.....	231
Figure 3-21: GMIB Withdrawals by IRA Owners	233
Figure 3-22: GMIB Withdrawals by Nonqualified Owners	234
Figure 3-23: GMIB First Withdrawals in 2014 (IRA Contracts Only).....	236
Figure 3-24: GMIB First Withdrawals in 2014 (Nonqualified Contracts Only)	238
Figure 3-25: GMIB Withdrawals With Systematic Withdrawal Plans	244
Figure 3-26: GMIB Actual Withdrawals as a Percentage of Annual Benefit Maximum	247
Figure 3-27: GMIB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age	248
Figure 3-28: GMIB Withdrawals to Benefit Maximum Amount by Withdrawal Method and Age.....	250
Figure 3-29: GMIB Withdrawals to Annual Benefit Maximum Amount by Age, Contract Sizes Under \$100,000.....	252
Figure 3-30: GMIB Withdrawals to Annual Benefit Maximum Amount by Age, Contract Sizes \$100,000 to \$249,999	252
Figure 3-31: GMIB Overall Utilization Rates of Withdrawal by Contract Duration.....	253
Figure 3-32: GMIB Overall Utilization Rates by Contract Duration and Source of Funds	254
Figure 3-33: GMIB Overall Utilization Rates by Contract Duration and Current Owner Age.....	255
Figure 3-34: GMIB Withdrawals to Average Contract Value Ratio (For Contracts With Withdrawals Only)	256
Figure 3-35: GMIB Ratio of Withdrawal Amount to Average Contract Value and to Benefit Base.....	257
Figure 3-36: GMIB Total Withdrawals to Total Contract Value (All Contracts).....	258
Figure 3-37: GMIB Total Withdrawals to Total Contract Values (For Contracts With Withdrawals).....	259
Figure 3-38: GMIB Surrender Rates in 2014 by Quarter and Year of Contract Issue	267
Figure 3-39: GMIB Contract Surrender Rates by Share Classes	268
Figure 3-40: GMIB Cash Value Surrender Rate by Share Classes.....	269
Figure 3-41: GMIB Contract Surrender Rate by Owners Who Took Withdrawals in 2014	270
Figure 3-42: GMIB Contract Surrender Rate by Owners Taking Withdrawals Before 2014	271
Figure 3-43: GMIB Cash Value Surrender Rate by Owners Who Took Withdrawals in 2014	272
Figure 3-44: GMIB Cash Value Surrender Rate by Owners Who Took Withdrawals Before 2014	272
Figure 3-45: GMIB Contract Surrender Rates by Owners With Contracts Issued Between 2006-2008 Who Took Withdrawals, in Relation to Annual Benefit Maximum Allowed.....	273
Figure 3-46: GMIB Cash Value Surrender Rates by Owners With Contracts Issued Between 2006-2008 Who Took Withdrawals, in Relation to Annual Benefit Maximum Allowed.....	274
Figure 3-47: GMIB Contract Surrender Rates by Withdrawal Methods	275
Figure 3-48: GMIB Cash Value Surrender Rates by Withdrawal Methods.....	276
Figure 3-49: GMIB Contract Surrender Rate by Amount the Benefit Base Exceeded the Contract Value When No Withdrawals Taken Before 2014.....	277
Figure 3-50: GMIB Cash Value Surrender Rate by Amount the Benefit Base Exceeded the Contract Value When No Withdrawals Taken in or Before 2014.....	278
Figure 3-51: GMIB Contract and Cash Value Surrender Rates in 2014 by Benefit Maturity Year	279
Figure 4-1: GMAB Ownership by Source of Funds and Age Group.....	286
Figure 4-2: GMAB Median Contract Value vs. Median Benefit Base, BOY 2014.....	291
Figure 4-3: GMAB Ratio of Benefit Base to Contract Value, BOY 2014.....	292

Figure 4-4:	GMAB Median Contract Value vs. Median Benefit Base, EOY 2014	293
Figure 4-5:	GMAB Ratio of Benefit Base to Contract Value Distribution at EOY 2014	294
Figure 4-6:	GMAB Average Contract Values and Benefit Base Values	295
Figure 4-7:	GMAB Average Contract Value and Benefit Base for Contracts Without Withdrawals	296
Figure 4-8:	GMAB Average Contract Value and Benefit Base for Contracts With Withdrawals.....	296
Figure 4-9:	GMAB Benefit Base to Contract Value Ratios by Age — at BOY 2014	297
Figure 4-10:	GMAB Benefit Base to Contract Value Ratios by Age — at EOY 2014.....	298
Figure 4-11:	GMAB Benefit Calculation Method	298
Figure 4-12:	GMAB Percentage of Contracts by Benefit Maturity Year	299
Figure 4-13:	GMAB Median Benefit Bases and Contract Values by Benefit Maturity Year	300
Figure 4-14:	GMAB Median Benefit Base to Median Contract Value Ratio at EOY 2014, by Benefit Maturity Year.....	301
Figure 4-15:	GMAB Overall Withdrawals	302
Figure 4-16:	GMAB Withdrawals by Fund Source and Owner Age	303
Figure 4-17:	GMAB Withdrawals by IRA Owners.....	304
Figure 4-18:	GMAB Withdrawals by Nonqualified Owners.....	304
Figure 4-19:	GMAB Amount of Withdrawals by Owner's Current Age	305
Figure 4-20:	GMAB Withdrawals With Systematic Withdrawal Plans	306
Figure 4-21:	GMAB Surrender Rate by Quarter of Contract Issue.....	308
Figure 4-22:	GMAB Contract Surrender Rates in 2014 by Share Classes.....	309
Figure 4-23:	GMAB Cash Value Surrender Rates in 2014 by Share Classes.....	310
Figure 4-24:	GMAB Contract Surrender Rates in 2014 by Surrender Charge Percentage.....	310
Figure 4-25:	GMAB Cash Value Surrender Rates in 2014 by Surrender Charge Percentage.....	311
Figure 4-26:	GMAB Contract Surrender Rates in 2014, by Owners Who Took Withdrawals in 2014	312
Figure 4-27:	GMAB Contract Surrender Rates by Owners Who Took Withdrawals Before 2014	313
Figure 4-28:	GMAB Cash Value Surrender Rates in 2014, by Owners Who Took Withdrawals in 2014.....	314
Figure 4-29:	GMAB Cash Value Surrender Rates by Owners Who Took Withdrawals Before 2014	314
Figure 4-30:	GMAB Surrender Rates in 2014 by Benefit Maturity Year	315
Figure 4-31:	GMAB Contract Surrender Activity by Benefit Maturity Year and Presence of Surrender Charge.....	316
Figure 4-32:	GMAB Contract Surrender Activity by Amount The Benefit Base Exceeded the Contract Value	317
Figure 4-33:	GMAB Cash Value Surrender Activity by Amount The Benefit Base Exceeded the Contract Value	317
Figure C1-1:	GLWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Traditional IRA Only	353
Figure C1-2:	GLWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Nonqualified Only	353
Figure C2-1:	GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Traditional IRA Only	354
Figure C2-2:	GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Nonqualified Only	354
Figure C3-1:	GMIB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Traditional IRA Only	355
Figure C3-2:	GMIB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Nonqualified Only	355

Tables

Table 1-1:	GLWB Average Age of Buyers	36
Table 1-2:	2014 GLWB Buyers Average Age Analysis by Characteristics.....	43
Table 1-3:	GLWB Owner and Contract Characteristics.....	45
Table 1-4:	GLWB Benefit Bases and Contract Values, at BOY 2014.....	49
Table 1-5:	GLWB Benefit Bases and Contract Values, at EOY 2014.....	50
Table 1-6:	GLWB Percentage of IRA Owners Taking First Withdrawal in 2014.....	70
Table 1-7:	GLWB Percentage of Owners Taking First Withdrawal in 2014 (Nonqualified)	73
Table 1-8:	GLWB First Withdrawals for 2007 Buyers (IRA).....	75
Table 1-9:	GLWB First Withdrawals for 2007 Buyers (Nonqualified).....	78
Table 1-10:	GLWB First Withdrawals for 2008 Buyers (IRA).....	80
Table 1-11:	GLWB First Withdrawals for 2008 Buyers (Nonqualified).....	81
Table 1-12:	GLWB Average Withdrawal Amount by SWP and by Source of Funds.....	83
Table 1-13:	GLWB Occasional Withdrawal Amount by Source of Funds.....	84
Table 1-14:	GLWB Withdrawal Amount as Percentage of Total Withdrawal Amount	84
Table 1-15:	GLWB First SWP Withdrawals (and Continued Thereafter) for 2007 IRA Buyers	86
Table 1-16:	GLWB First Withdrawals (and Continued Thereafter) for 2007 Nonqualified Buyers.....	88
Table 1-17:	Percentage of GLWB Owners Taking Withdrawals as Percent of Benefit Maximum...92	
Table 1-18:	GLWB Overall Percentage of Contracts Taking Withdrawals by Year of Issue.....97	
Table 1-19:	GLWB Historical Trends of Benefit Base vs. Contract Value at BOY.....112	
Table 1-20:	GLWB Percentage of Owners Taking Withdrawals by Degree of In-the-Money	115
Table 1-21:	GLWB Utilization by Month of Issue, Contracts Issued in 2014	118
Table 1-22:	GLWB Utilization by Selected Characteristics	119
Table 1-23:	GLWB Net Flows.....	126
Table 1-24:	GLWB Surrender Rates.....	141
Table 1-25:	GLWB Product and Benefit Characteristics	143
Table 2-1:	GMWB Owner and Contract Characteristics	150
Table 2-2:	GMWB Benefit Base Balances and Contract Values, at BOY 2014	152
Table 2-3:	GMWB Benefit Base Balances and Contract Values, at EOY 2014	153
Table 2-4:	GMWB First Withdrawals for 2007 Buyers.....	163
Table 2-5:	GMWB Withdrawal Types and Median Amount by Source of Funds	166
Table 2-6:	GMWB Withdrawal Amounts as Percentage of Total Withdrawal Amount	166
Table 2-7:	GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age Groups.....	170
Table 2-8:	GMWB Utilization by Selected Characteristics	186
Table 2-9:	GMWB Net Flows.....	189
Table 2-10:	GMWB Surrender Rates.....	200
Table 2-11:	GMWB Product and Benefit Characteristics	202
Table 3-1:	GMIB Owner and Contract Characteristics.....	209
Table 3-2:	GMIB Benefit Bases and Contract Values, at BOY 2014.....	211
Table 3-3:	GMIB Benefit Bases and Contract Values, at EOY 2014.....	211
Table 3-4:	GMIB Owner of Annuitized Contract Characteristics Issued 2014 or Earlier*	227
Table 3-5:	GMIB First Withdrawals for 2008 IRA Buyers.....	240
Table 3-6:	GMIB First Withdrawals for 2008 Nonqualified Buyers	242
Table 3-7:	GMIB Systematic Withdrawal Amounts by Age and Source of Funds	245
Table 3-8:	GMIB Occasional Withdrawal Amounts by Age and Source of Funds	245

Table 3-9:	GMIB Withdrawal Amounts as Percentage of Total Withdrawal Amount.....	246
Table 3-10:	Percentage of GMIB Owners Taking Withdrawals as Percentage of Benefit Maximum.....	249
Table 3-11:	GMIB Withdrawals by Select Characteristics.....	264
Table 3-12:	GMIB Net Flows	266
Table 3-13:	GMIB Surrender Rates	280
Table 4-1:	GMAB Owner and Contract Characteristics	288
Table 4-2:	GMAB Benefit Base and Contract Value, at BOY 2014	290
Table 4-3:	GMAB Benefit Base and Contract Value, at EOY 2014	290
Table 4-4:	GMAB Net Flows.....	307
Table 4-5:	GMAB Surrender Rates.....	318
Table 4-6:	GMAB Product and Benefit Characteristics	320
Table B1-1:	GLWB Contract Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge.....	326
Table B1-2:	GLWB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge.....	327
Table B1-3:	GLWB Contract Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge.....	328
Table B1-4:	GLWB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge.....	329
Table B1-5:	GLWB Contract Surrender Rates by Owners Taking Withdrawals in Relation to Annual Benefit Maximum Allowed and by Presence of Surrender Charge	330
Table B1-6:	GLWB Cash Value Surrender Rates by Owners Taking Withdrawals in Relation to Annual Benefit Maximum Allowed and by Presence of Surrender Charge	331
Table B1-7:	GLWB Contract Surrender Rates by Withdrawal Method and by Presence of Surrender Charge.....	332
Table B1-8:	GLWB Cash Value Surrender Rates by Withdrawal Method and by Presence of Surrender Charge.....	333
Table B2-1:	GMWB Contract Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge.....	334
Table B2-2:	GMWB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge.....	335
Table B2-3:	GMWB Contract Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge.....	336
Table B2-4:	GMWB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge.....	337
Table B2-5:	GMWB Contract Surrender Rates by Owners Taking Withdrawals in Relation to Annual Benefit Maximum Allowed and by Presence of Surrender Charge	338
Table B2-6:	GMWB Cash Value Surrender Rates by Owners Taking Withdrawals in Relation to Annual Benefit Maximum Allowed and by Presence of Surrender Charge	339
Table B2-7:	GMWB Contract Surrender Rates by Withdrawal Method and by Presence of Surrender Charge.....	340
Table B2-8:	GMWB Cash Value Surrender Rates by Withdrawal Method and by Presence of Surrender Charge.....	341
Table B3-1:	GMIB Contract Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge.....	342
Table B3-2:	GMIB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge.....	343

Table B3-3: GMIB Contract Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge.....	344
Table B3-4: GMIB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge.....	345
Table B3-5: GMIB Contract Surrender Rates by Withdrawal Method and by Presence of Surrender Charge.....	346
Table B3-6: GMIB Cash Value Surrender Rates by Withdrawal Method and by Presence of Surrender Charge.....	347
Table B4-1: GMAB Contract Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge.....	348
Table B4-2: GMAB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge.....	349
Table B4-3: GMAB Contract Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge.....	350
Table B4-4: GMAB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge.....	351
Table B4-5: GMAB Contract Surrender Rates by Benefit Maturity Year and by Presence of Surrender Charge	352
Table B4-6: GMAB Cash Value Surrender Rates by Benefit Maturity Year and by Presence of Surrender Charge	352

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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 Secure Retirement Institute Variable Annuity Guaranteed Living Benefit Utilization Study (VAGLBUS) — 2014 Experience is an annual update of earlier investigations, conducted since 2006.

The study examines the GLB utilization of over 4.9 million contracts that were either issued during or in force as of 2014. Twenty-one insurance companies participated in this study. These 21 companies made up 68 percent of all GLB sales in 2014 and 73 percent of assets at year-end, and thus provide a substantial representation of this business.

Products with 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 comprised 64 percent of new VA sales in 2014, according to LIMRA's Election Tracking Survey.¹ The LIMRA Secure Retirement Institute estimates that GLB assets were \$843 billion, constituting 43 percent of total VA assets as of year-end 2014.

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 connection with behaviors such as persistency — can assist insurers with assessing and managing the long-term risks of these GLBs.

¹ *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2014*, LIMRA Secure Retirement Institute, 2015.

Executive Summary

Based on nine years of studying VA GLBs, 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 provide important insights into how these owners may behave in the future. We have found relationships among characteristics like age, source of funding (qualified or nonqualified), and withdrawal methods (systematic withdrawal programs [SWPs] or non-SWPs). Certain owner withdrawal characteristics influence surrender rates. An analysis of these elements enables us to understand withdrawal risk for 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 they will 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 90 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 withdrawals.
 - Before age 70, there is no perceptible difference between percentages of owners who take withdrawals either from their qualified or nonqualified annuities.²
 - 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 percentage 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, the number of owners who take withdrawals from nonqualified contracts shows an incremental and steady increase. 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 customers buy the annuities also have an impact on how customers take withdrawals, but these factors are not as significant as age and source of money.
 - Contracts where the benefit bases exceeded the contract values did not have a major impact on withdrawal behavior for GLWB owners who started withdrawals in 2014.

² Unless otherwise specified, throughout this report, owner age is defined as the age of the owner/annuitant as of year-end 2014.

Method of Withdrawals

- A majority of owners take withdrawals through 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 any time soon.
- Older owners are more likely to take withdrawals through SWPs.

Percentage of 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 — particularly those under age 60 — are more likely to take withdrawals greater than the maximum amount allowed. For IRA owners over age 70½, some excess withdrawals are due to RMDs. Most withdrawals in excess of 125 percent of the annual benefit maximum amount come from occasional or non-systematic withdrawals.
- 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.

Surrender Rates

- The surrender rates among GLWB and GMIB owners, particularly among owners aged 65 and over who take withdrawals, are relatively low.
- The surrender rates among owners using SWPs as methods of withdrawals are lower compared with owners who take 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 are more likely to surrender their contracts.
- Surrender rates are also low for GLWB owners aged 65 and older not taking withdrawals; GMIB owners aged 65 and older not taking withdrawals experience increasing surrender rates with age.

- The surrender rates show a U-shaped relationship to the percent of annual benefit maximum withdrawn — those with very low and very high ratios of withdrawals relative to the maximum allowed have higher surrender rates than those in the middle categories. The percentage of annual benefit maximum withdrawn is impacted by the owner's age and method of withdrawal (SWPs 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 benefit base exceeds the contract value.

Action Steps and Issues to Consider

- **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.** Two thirds of buyers use qualified money to purchase their GLWBs. Most of these qualified annuity buyers use a portion of their 401(k) or IRA savings to purchase a GLB rider that provides the ability to create a guaranteed income stream, safe from market risk. Many will activate the guaranteed withdrawal provisions at RMD age 70½.
- **Infusion of qualified money causes special challenges to insurers.** The increasing mix of qualified money into the insurer's book of business poses a challenge in terms of managing 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 from a nonqualified block of business.
- **Insurance companies can 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 take withdrawals are more likely to fully surrender their contracts.

- **Companies can 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 critical is that 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 higher persistency compared with 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 2,847,544 contracts issued by 19 companies

Owner Profiles

- The average age of GLWB buyers in 2014 was 63 years. Three quarters of new GLWB buyers in 2014 were Baby Boomers, aged 50 to 68.
- Rollover dollars are a major source for GLWB funding. Seven out of ten 2014 buyers under age 70 used qualified money (i.e., IRAs) to buy a GLWB annuity. This trend reflects broader industry trends that the LIMRA Secure Retirement Institute 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 2014 was \$137,800 — 7 percent higher than the \$128,700 received in 2013. The average contract value of GLWB contracts was \$137,600 at the end of 2014 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 was 18 percent higher than the average premium from contracts purchased by females.

Benefit Base

- At the beginning of 2014, 48 percent of contracts with GLWBs issued before 2014 had benefit bases that exceeded contract values. The average difference between the benefit base and contract value was approximately \$3,500.
- At year-end, 76 percent of contracts had benefit bases exceeding the contract values. The gap between the average contract value and the average benefit base increased to \$9,000. The average contract value stood at \$137,800 while the average benefit base was \$146,800 at year-end 2014.

Withdrawal Activity

- Overall utilization rates have gradually increased for contracts that were in force for an entire year. Twenty-four percent of contracts had at least some withdrawal activity during 2014. For 3 out of 4 contracts, these were systematic withdrawals.
- Once owners start to take withdrawals, they are likely to continue withdrawals. Ninety-six percent of GLWB customers who purchased their contracts in 2013 and took withdrawals that year also took withdrawals in 2014.

- Contract benefits being in-the-money appeared to have little influence on withdrawal behavior for GLWB owners in 2014.
- The median amount withdrawn was \$6,000, representing 6.0 percent of the average beginning-of-year (BOY) median contract value of \$100,300.
- Just over 7 out of 10 VA GLWB owners over age 70 took withdrawals from annuities purchased with qualified money. Nearly 40 percent of owners aged 80 or older took withdrawals from their nonqualified annuities.
- The withdrawal amount for just 1 in 9 owners aged 60 or older exceeded 150 percent or more of the maximum withdrawal amount allowed. In general, younger owners are more likely to take withdrawals more than the maximum amount allowed. Some IRA owners over age 70½ took excess withdrawals to satisfy RMDs.
- 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 was slightly lower than the percent of owners taking withdrawals from single life contracts.

Additional Premium and Net Flows

- Four percent of contracts issued in 2013 or earlier received additional premium in 2014. Contracts issued in 2013 were more likely than contracts issued in earlier years to have additional premium. Owners rarely add premium after the second year of owning a GLWB.
- Younger owners were more likely to add premium than older owners.
- At the beginning of 2014, assets in GLWB contracts amounted to \$345.5 billion. Premium from newly issued and existing contracts was \$42.3 billion while investment gains hit \$8.4 billion. Outflows from partial withdrawals, full surrenders, deaths, and annuitizations amounted to \$19.5 billion. By the end of 2014, GLWB assets reached \$376.7 billion.

Persistency

- Surrender rates were extremely low for VAs with GLWBs. Across all contracts, only 3.6 percent surrendered during 2014.
- The contract surrender rate was 10.1 percent for owners under age 60 who took withdrawals in 2014. The contract surrender rate was only 3.0 percent among owners under age 60 who did not take any withdrawals in 2014.

- The contract surrender rate among owners aged 60 or older who took withdrawals in 2014 (3.2 percent) was a bit lower than the surrender rate for owners aged 60 or older who did not take withdrawals in 2014 (4.0 percent).
- The surrender rates were quite high among the owners who either took withdrawals below 75 percent of the maximum allowed in the contracts (7.3 percent) or whose withdrawal amounts were 200 percent or more of the maximum allowed (10.9 percent). The surrender rate among owners who took withdrawals between 75 percent to 110 percent of the maximum amount allowed in the contracts was the lowest, only 1.1 percent.
- GLWB contract surrender rates were 7.2 percent among owners who took non-systematic withdrawals compared with 2.4 percent for owners who took systematic withdrawals in 2014.
- Surrender rates were lower for contracts where the benefit base amount exceeded that contract value at BOY.

Product and Benefit Characteristics

- The average buyer in 2014 paid about 236 basis points for a VA with a GLWB, as a percentage of contract value, VA subaccounts, or benefit base values.³
- On average, owners who purchased contracts in 2014 can take lifetime benefits as early as age 53 and can elect the GLWB until they reach age 83. However, some contracts allow lifetime withdrawal benefits to begin as early as age 50 or as late as age 99.
- In five out of six contracts issued in 2014, 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). One in six reduced the benefit bases on a dollar-for-dollar basis (usually up to the annual growth of the benefit base).
- In 2014, just under half of the GLWB contracts issued had maximum payouts of 4 percent or lower.

³ Note that average costs do not include fund management fees or costs associated with other benefits such as guaranteed minimum death benefits.

Guaranteed Minimum Withdrawal Benefits (GMWBs)

Results based on 213,459 contracts issued by 13 companies

Owner Profiles

- Over half (53 percent) of the in-force GMWB owners were aged 70 or older.

Benefit Base Balance

- At the beginning of the year, 19 percent of contracts with GMWBs issued before 2014 had benefit base balances that exceeded contract values. At the end of the year, 29 percent of contracts had contract values that were below the benefit base balance values, principally due to limited investment gains in 2014.
- For GMWBs, the overall ratio of average contract value to average benefit base balance remained relatively unchanged from BOY to EOY — 107 percent at the beginning of 2014 and 106 percent at year-end.
- The average contract value declined from \$119,100 at the beginning of 2014 to \$118,600 at the end of 2014. At the end of 2014, the average benefit base balance stood at \$111,700, with a gap of \$6,900 compared to the average contract value.

Withdrawal Activity

- Forty-nine percent of GMWB contracts had at least some withdrawal activity during 2014 — the highest overall withdrawal activity for any of the GLBs. Almost 8 in 10 withdrawals were through SWPs.
- The median withdrawal amount in GMWB contracts in 2014 was \$6,100.
- The percent of owners taking withdrawals exceeded 90 percent, for ages 83 and older that were purchased with qualified money. Around 50 percent of owners aged 75 or older took withdrawals from their nonqualified annuities.
- 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.
- Seventy-three percent of owners that took withdrawals in 2014 withdrew within 110 percent of the maximum withdrawal amount allowed in the contract.
- Once owners start to take withdrawals, they are likely to continue withdrawals.
- A contract where the benefit base balance exceeded the contract value appeared to have no major influence on withdrawal behavior of GMWB owners in 2014.

Additional Premium and Net Flows

- Among contracts issued in 2014 or earlier, only 2 percent received additional premium in 2014.
- At the beginning of 2014, assets in GMWB contracts amounted to \$25.3 billion. Gains due to premium received (\$0.4 billion) and equity market growth (\$0.5 billion) were offset by outflows from partial withdrawals, full surrenders, deaths, and annuitizations (\$3.2 billion). EOY 2014 GMWB assets declined by 9 percent to \$23.0 billion.

Persistency

- Surrender rates in 2014 for GMWB contracts issued before 2014 were 8.2 percent for contract surrender rate and 8.7 for cash value surrender rate.
- High surrender rates were associated with owners aged 60 and older not taking withdrawals in 2014 and owners under age 60 who took withdrawals before 2014.
- The contract surrender rate in 2014 was 3.7 percent for contracts with surrender charges and over four times that amount (17.0 percent) for contracts that exited the surrender penalty period in 2014. Among contracts that exited the surrender penalty period in 2013 or earlier, the contract surrender rate was 9.5 percent.
- There was a 2 percent surrender rate for owners who took withdrawals between 75 percent to less than 200 percent of the maximum withdrawal amount allowed in the contracts.
- GMWB contract surrender rates were 8.1 percent among owners who took non-systematic withdrawals vs. 4.4 percent among owners who took systematic withdrawals in 2014.
- GMWB owners appear to be sensitive to the amount that the benefit base balance exceeds the contract value when deciding whether to surrender their contracts.

Product and Benefit Characteristics

- Seven percent was by far the most common annual withdrawal maximum, followed by 5 percent.
- Unlike GLWB contracts, most GMWB contracts do not offer an automatic increase in benefit base balance in case the withdrawals are not taken immediately. Also, all GMWB contracts issued in the past few years do not have caps on benefit base balances.
- All recently offered GMWB contracts have an annual step-up option.

Guaranteed Minimum Income Benefits (GMIBs)

Results based on 1,601,902 contracts issued by 15 companies

Owner Profiles

- The average age of GMIB owners was 64, as of year-end 2014. Thirty percent 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 2014 was \$126,100.
- B-share contracts were the most common cost structure (70 percent).

Benefit Base

- At the beginning of the year, almost two thirds of the GMIB contracts issued before 2014 had benefit bases that exceeded contract values. At the end of 2014, this proportion increased to 83 percent.
- On average, the ratio of the average contract value to benefit base declined slightly from 89 percent at the beginning of 2014 to 86 percent by year-end.
- The average contract value increased from \$125,200 at the beginning of 2014 to \$126,500 at the end of 2014. Also at year-end, the average benefit base stood at \$146,900, about \$20,300 higher than the average contract value.
- At year-end, 14 percent of the contracts had benefit bases that exceeded the contract values by 110 to less than 125 percent and 30 percent had BB/CV ratios of 125 percent or more.

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 life-only payouts exceeded immediate annuity payouts by 16 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

- Only 1 in 4 contracts had reached the end of the waiting period to exercise the GMIB benefit by EOY 2014. Most GMIB contracts did not have the ability to activate the GMIB feature.
- Of those contracts that were issued before 2014 and reached their benefit maturities in 2014, approximately 3.8 percent annuitized their contracts in 2014. The overall 2014 annuitization rate for all in-force contracts at the beginning of 2014 was only 0.6 percent.
- Contract owners aged 60 and older, larger contract sizes, and higher benefit base to contract value ratios were associated with higher rates of annuitization.

Withdrawal Activity

- Thirty percent of GMIB contracts had at least some withdrawal activity during 2014.
- Three quarters of all GMIB withdrawal activity was in the form of systematic withdrawals.
- As observed with 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 exceeded 80 percent for ages 75 and older for IRA annuities purchased with qualified money. Withdrawal activity among nonqualified contracts was very low, reaching just over one third for owners around age 80.
- The median withdrawal amount in 2014 was \$6,300.
- Eighty-three percent of owners that took withdrawals in 2014 withdrew within 110 percent of the maximum annual benefit amount allowed in the contract.
- Once owners start to take withdrawals, they are likely to continue withdrawals. For example, for 2008 IRA contracts that took withdrawals, three quarters continued to take withdrawals in all subsequent years.
- A contract benefit being in-the-money appeared to have little influence on withdrawal behavior of GMIB owners in 2014.

Additional Premium and Net Flows

- Three percent of contracts issued before 2014 received additional premium in 2014.
- Younger owners were more likely to add premium than older owners.
- Premiums received for newly issued and existing contracts were below the outflows associated with withdrawals, surrenders, deaths, and annuitizations — \$6.3 billion and \$11.8 billion, respectively. The total number of GMIB in-force contracts declined slightly during 2014. At EOY 2014, GMIB assets were \$191.0 billion, 1 percent lower than the \$192.7 billion at BOY 2014.

Persistence

- Among all GMIB contracts issued before 2014, 4.3 percent were surrendered in 2014.
- For B-share contracts that still had a surrender charge in 2014, the surrender rate was 2.4 percent. For B-share contracts where the surrender charges expired in 2014, the contract surrender rate was 7.6 percent. The surrender rate was 7.0 percent for B-share contracts where surrender charges expired in previous years.
- The contract surrender rate among owners under age 60 who took withdrawals in 2014 was 7.6 percent, compared with only 3.9 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 3.1 percent, slightly lower than those who did not take withdrawals (5.1 percent).
- Contract surrender rates among owners who took withdrawals below 90 percent of the maximum allowed in the contracts and the owners who took more than 110 percent of the maximum allowed are higher than those closer to the maximum withdrawal amount.
- The contract surrender rate among owners who took non-systematic withdrawals in 2014 was 6.5 percent while the surrender rate among owners who withdrew systematically was only 2.3 percent.
- Surrender rates were lower for contracts that did not have any withdrawals before 2014 and the benefit base amount exceeded the contract value.

Guaranteed Minimum Accumulation Benefits (GMABs)

Results based on 312,475 contracts issued by 13 companies

Owner Profiles

- GMAB owners are typically younger than any other GLB buyers, with an average age of 59 years in 2014; half of GMAB owners were under age 60.
- Seven out of 10 of the in-force GMAB contracts were funded from qualified sources of money.
- The average contract value for GMAB contracts at EOY 2014 was \$98,300.

Benefit Base

- At the beginning of the year, 10 percent of GMAB contracts issued before 2014 had benefit bases that exceeded contract values. At the end of 2014, 11 percent of contracts had benefit bases that exceeded contract values.
- For average GMABs, the ratio of average contract value to benefit base changed from 113 percent at the beginning of 2014 to 117 percent by year-end.
- The average contract value increased from \$95,800 at the beginning of 2014 to \$97,100 at the end of 2014. At the end of 2014, the average benefit base stood at \$83,100, about \$13,900 lower than the average contract value.
- Eight in ten (81 percent) of the GMABs had benefit bases that were determined based on total premiums received, without any roll-up or ratcheting mechanisms.

Benefit Maturity

- Most GMAB contracts issued before 2014 have maturity dates in 2015 or later (86 percent). Nearly half of the in-force GMAB contracts will mature between 2015 and 2019.

Withdrawal Activity

- Nineteen percent of GMAB contracts had at least some withdrawal activity during 2014.
- The percent of GMAB owners using systematic withdrawals (43 percent) was much lower than owners using systematic withdrawals in other VA GLB products.

- Withdrawal activity was much more common among qualified contracts owned by customers aged 70 or older. The percent of owners with withdrawals reached 80 percent or higher for ages 76–84 for annuities purchased with qualified money.
- The median withdrawal amount in 2014 was \$7,500.

Additional Premium and Net Flows

- At the beginning of 2014, assets in GMAB contracts amounted to \$27.8 billion. Despite higher outflows than inflows, investment growth enabled year-end assets to remain flat for the year.

Persistency

- With an overall surrender rate of 9.5 percent, GMABs had the highest surrender rate of all GLBs.
- Surrender rates were quite high for GMAB contracts issued from 2002 to 2007 (16.1 percent), as the contracts came out of surrender charges.
- The surrender rate was 14.5 percent for contracts where surrender charges expired in previous years. For contracts still under surrender charges, the surrender rate was 5.0 percent.
- Generally, surrender rates were lower for contracts where the benefit base amount exceeded the contract value.

Product and Benefit Characteristics

- Among GMAB contracts issued in 2014, the average total charge (M&E and rider fee) was 2.15 percent.
- Almost all GMAB contracts issued in 2014 guaranteed 100 percent of premium at benefit maturity.
- All contracts issued in 2014 had a waiting period of 10 years or longer.

Chapter One

2014 EXPERIENCE

Guaranteed Lifetime Withdrawal Benefits

Chapter One: Guaranteed Lifetime Withdrawal Benefits

Since their introduction in 2004, guaranteed lifetime withdrawal benefits (GLWBs) continue to be the most popular type of guaranteed living benefit (GLB) in the variable annuity (VA) market. 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 investment performance of funds in their annuity. Typically, GLWB owners have flexibility in deciding when to start their withdrawals, can retain control over their assets, and are not obligated to annuitize their contracts to receive guaranteed lifetime income payments. In many 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 growth of the benefit base to include investment growth or guaranteed growth. Many of the GLWB riders currently offered have a “roll-up” feature that typically applies a set growth percentage to the benefit base for a predetermined number of years or until lifetime withdrawals start. More recent GLWB riders also include “step-up benefits,” where an owner can lock in investment gains, typically on a contract anniversary. Owners can usually take withdrawals immediately after purchasing their contracts, but may wait for several 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 2014, new GLWB sales reached \$56.7 billion, accounting for four fifths of all GLB sales premiums. In 2014, sales of GLWBs remained virtually unchanged from the prior year. GLWBs posted the highest election rates of any GLB type, when any GLB was available. GLWB election rates ranged from 62 percent (fourth quarter) to 66 percent (first quarter) in 2014.⁴ Assets in VAs with GLWBs grew 11 percent from \$493 billion at end-of-year (EOY) 2013 to \$549 billion at EOY 2014.

⁴ *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2014*, LIMRA Secure Retirement Institute, 2015.

This chapter provides important insights about GLWB buyers in 2014 and the behavior of existing owners who bought their GLWBs before 2014. LIMRA's GLWB database contains a comprehensive and representative sample of GLWB contracts. The 2014 study is based on 2,847,544 GLWB contracts issued by 19 companies. Of these contracts, 2,457,184 were issued before 2014 and remained in force at EOY 2014, while 279,596 contracts were issued in 2014 and remained in force at EOY 2014. The assets of in-force contracts in the study totaled \$377 billion at EOY 2014, representing 69 percent of total industry GLWB assets from a total of 212 GLWB riders.

Buyer and Owner Profiles

The average age of GLWB buyers in 2014 was **63** years.

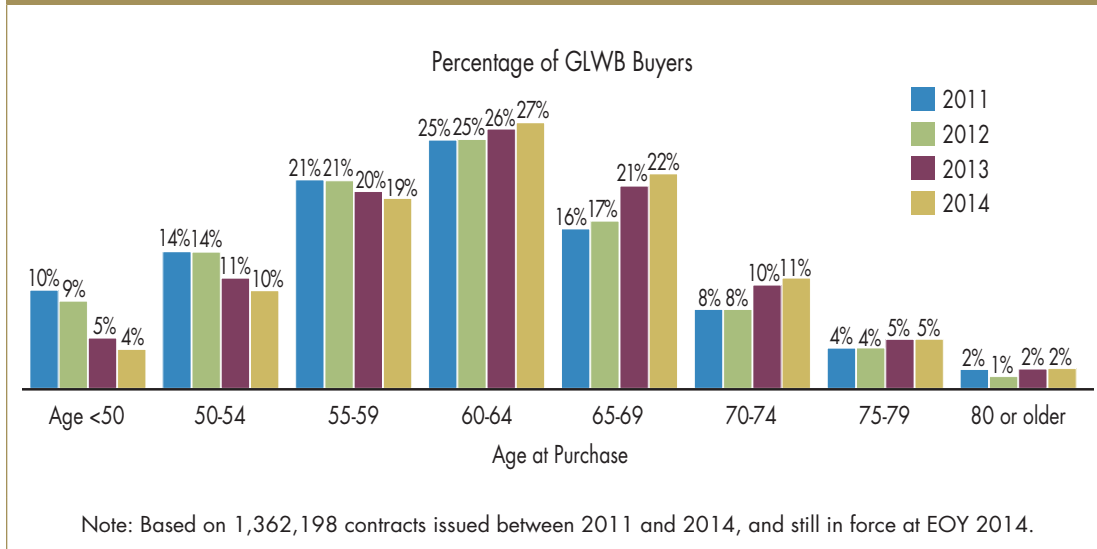
In 2014, the average age of GLWB buyers was 63 years (Table 1-1). Although the average age in the lower and upper quartile range shifted downward from 2008 to 2010, that trend changed in 2011. By 2014, the average lower quartile age increased to age 58 and the average upper quartile age was 68. GLWBs remain popular with the leading edge of Baby Boomers (aged 59 to 68) who purchased half of the contracts in 2014 (Figure 1-1).

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
2008	60	55	60	66
2009	59	54	59	65
2010	60	54	60	65
2011	61	55	60	66
2012	61	55	61	66
2013	62	57	62	67
2014	63	58	63	68

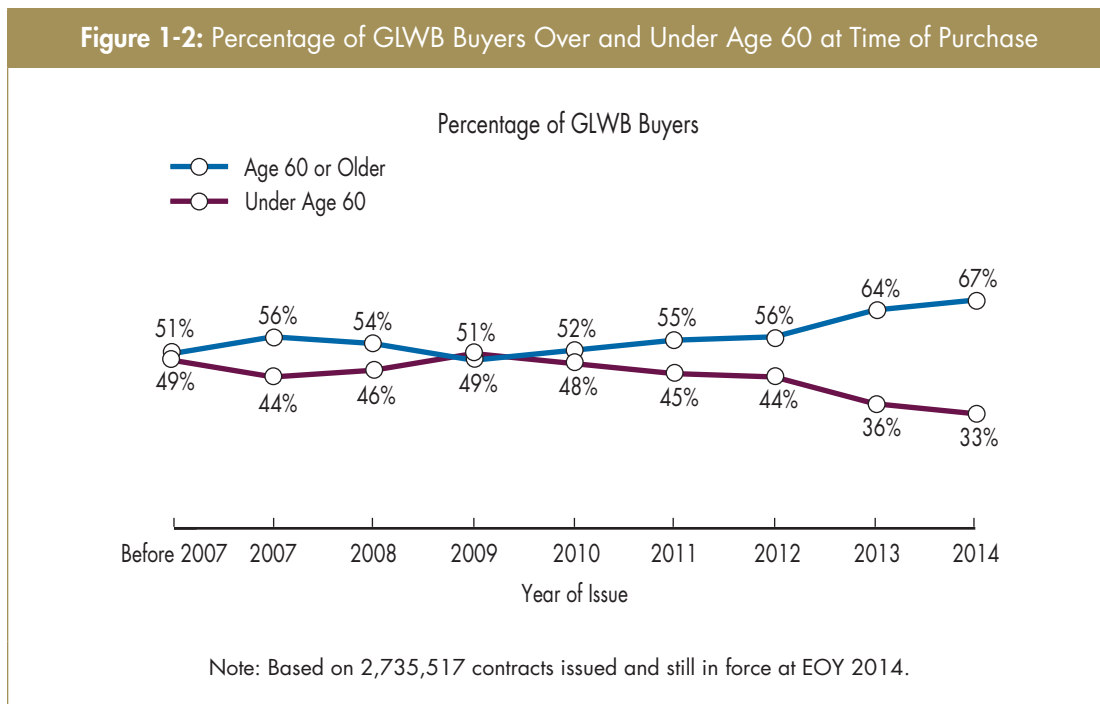
Note: Based on 2,736,780 contracts issued between 2008 and 2014 and still in force at EOY 2014.

Figure 1-1: GLWB Buyers by Age at Time of Purchase, 2011–2014



GLWBs remain popular among pre-retirees for a couple of reasons. First, pre-retirees 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, pre-retiree investors exposed to turbulent markets can get the upside market potential of the VA contract while benefiting from protection of the lifetime income guarantee as a floor.

Figure 1-2: Percentage of GLWB Buyers Over and Under Age 60 at Time of Purchase



Since 2009, the percentage of buyers aged 60 and older has been increasing (Figure 1-2). One reason for this is companies focusing their marketing efforts toward individuals nearing retirement. Some companies have also changed their products to carefully manage risk, and this includes increasing their minimum purchase ages and reducing withdrawal percentages for younger consumers. These factors have all contributed to the average buyer age increasing in 2014.

Some Baby Boomers have 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

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

concerned about the uncertainty of Social Security and health care benefits like Medicare. Insurance companies have succeeded in marketing guaranteed lifetime withdrawal or income benefit features, as more retirees and pre-retirees are forced to take personal responsibility for ensuring stable retirement income from their savings/investments.

Increasingly, advisors consider protecting against longevity risk to be one of the most valuable services they offer. 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, the vast majority of 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.

Companies should use the data provided throughout this chapter as a basis for examining:

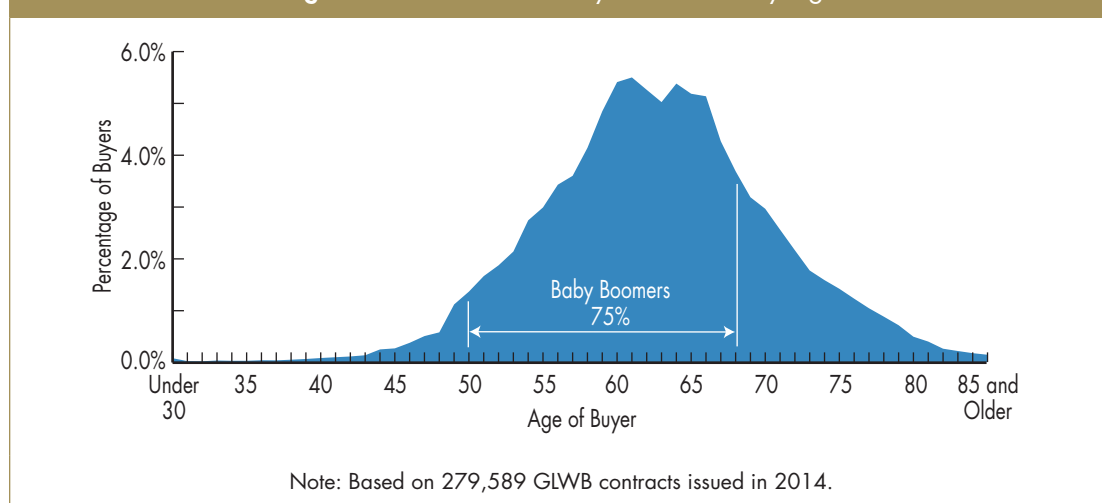
- Whether their customer mix deviates from that of the industry.
- How they manage the risks associated with providing a guarantee to younger buyers — both short- and long-term. A particular company's risk in providing guarantees may stem from issues such as potential growth in benefit bases, depending 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 benefit base is greater than the contract value — where market volatility and the asset allocation models offered have had an impact on the contract value in the contract.
- 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 2014 increases starting at age 45 and reaches its highest points at age 61 — an important life-stage retirement inflection point for many retirees and pre-retirees (Figure 1-3). The percent of new buyers starts to diminish after age 64, with each increase in year of age. Three fourths of GLWB buyers in 2014 were Baby Boomers (aged 50–68). Half of the buyers were leading-edge Boomers (aged 59–68). Only 18 percent were aged 70 or above.

Figure 1-3: New GLWB Buyers in 2014 by Age



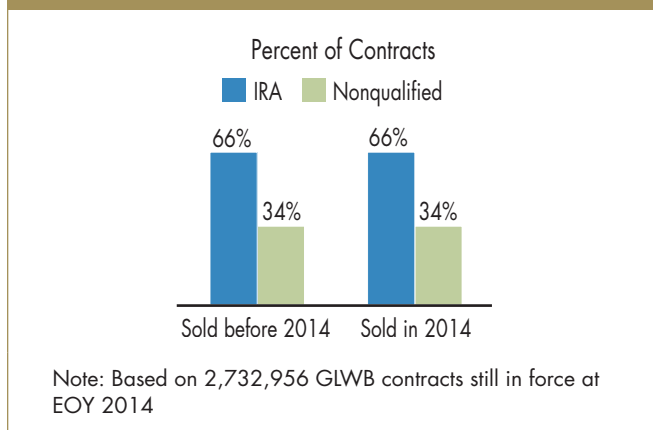
75% of GLWB buyers in 2014 were Baby Boomers.

If a company has a different mix of buyers than the industry, it can 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 messages to attract prospects from segments where there is growth and opportunity. Second, companies could study their own customer mix to assess potential customer behavior with issues like withdrawals and surrenders. They can 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 2014, 66 percent of contracts were funded from qualified sources of money, down slightly from the 68 percent observed in our 2012 study (Figure 1-4). This is slightly higher than broader industry developments that the LIMRA Secure Retirement Institute has tracked, where roughly 6 in 10 retail VAs are funded with IRA money, the bulk of which is from rollovers.

Figure 1-4: GLWB Contracts by Source of Funds



More rollover dollars are significant to insurance companies for two reasons. First, LIMRA studies show that rollover dollars are a significant source of VA funding.⁵ 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 (IRAs) 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 behaviors 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 money to purchase an income annuity.⁶ 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, with peaks around ages 60 and 65.

66% of GLWB sales in 2014 were from IRAs. GLWBs attract rollover dollars, allowing companies to organically grow their business.

⁵ *Retirement Income Reference Book, 2015*, LIMRA, 2015

⁶ *Guaranteed Income Annuities*, LIMRA, 2010.

- It appears that some consumers intend to use their nonqualified savings for other investment or planning needs. Advisors and sales representatives can build relationships with 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 advisor influences rollover decisions.

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.

Table 1-2 shows the mean, median, and quartile age of 2014 GLWB buyers by demographic and contract characteristics. The data show variations in average purchase age such as nonqualified buyers who were two years older than IRA buyers. Joint lives contracts are more appealing to slightly older investors. The average buyer age increases with larger premium contracts. Compared with other distribution channels, buyers at full-service national broker-dealers are a bit older.

Table 1-2: 2014 GLWB Buyers Average Age Analysis by Characteristics

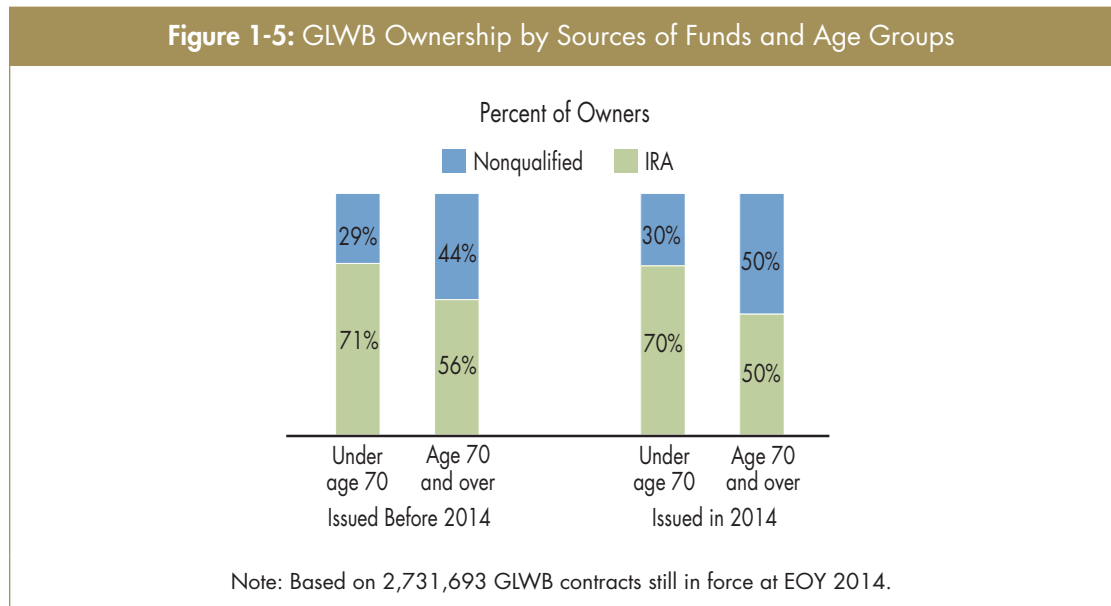
	Average Age			
	Mean	For Lower Quartile	Median	For Upper Quartile
Gender				
Male	63	58	63	67
Female	63	58	63	68
Market type				
IRA	62	57	62	66
Nonqualified	64	59	64	70
Share class				
B-share	62	57	62	67
L-share	63	58	63	68
O-share	64	60	64	68
C-share	65	60	65	69
Single-joint				
Single	62	57	62	67
Joint	63	58	63	68
Asset allocation restrictions				
Forced assets allocations	62	57	62	67
Managed volatility/dynamic asset allocations	63	58	62	67
Average premium size				
Under \$25,000	59	54	59	65
\$25,000 to \$49,999	62	57	62	68
\$50,000 to \$99,999	63	58	63	68
\$100,000 to \$249,999	63	58	63	68
\$250,000 to \$499,999	63	59	63	67
500,000 or higher	63	59	63	68
Distribution channel				
Career agent	62	57	61	66
Independent agent/independent B-D	63	57	62	68
Full Service National B-D	64	59	64	69
Bank	63	58	63	68

Note: Based on 279,596 GLWB contracts issued in 2014 and still in force at EOY 2014.

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 IRA and Nonqualified Annuities

Individuals under age 70 who use qualified savings to make their purchase emerge as the primary market segment for GLWBs. In 2014, 70 percent of owners under age 70 funded their annuities with IRA money (Figure 1-5). In contrast, half of owners aged 70 or older funded contracts with IRA sources in 2014, yet there was a higher use of IRA savings for contracts issued before 2014.



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 mix of business that is qualified will have an impact on how many customers will withdraw from their VAs in the future, and when they will start their withdrawals.

GLWB Owner and Contract Characteristics

Table 1-3 provides a summary of GLWB owner and contract characteristics at EOY 2014.

Table 1-3: GLWB Owner and Contract Characteristics				
	Issued before 2014	Issued in 2014	All Contracts in Force	Average Premium (for Contracts Issued in 2014)
Age of Owner				
Age 59 & under	26%	30%	26%	\$125,552
60 to 64	22%	27%	22%	\$144,208
65 to 69	23%	23%	23%	\$144,448
70 to 74	15%	12%	15%	\$139,682
75 to 79	8%	6%	8%	\$140,596
80 or older	6%	2%	5%	\$143,254
Average age	65 years	63 years	65 years	
Gender				
Male	50%	49%	50%	\$149,679
Female	50%	51%	50%	\$126,377
Market type				
IRA	66%	66%	66%	\$138,025
Nonqualified	34%	34%	34%	\$137,418
IRA by age				
Age 59 & under	28%	32%	28%	\$121,488
60 to 64	23%	29%	24%	\$147,256
65 to 69	25%	23%	25%	\$147,544
70 to 74	15%	10%	14%	\$141,668
75 to 79	7%	4%	6%	\$139,711
80 or older	3%	1%	3%	\$136,689
Nonqualified by age				
Age 59 & under	21%	26%	22%	\$141,517
60 to 64	19%	22%	19%	\$138,981
65 to 69	21%	23%	21%	\$139,730
70 to 74	17%	16%	17%	\$138,037
75 to 79	12%	10%	11%	\$141,817
80 or older	11%	4%	10%	\$146,978

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

	Issued Before 2014	Issued in 2014	All Contracts in Force	Average Premium (for Contracts Issued in 2014)
Distribution channel				
Career agent	21%	23%	21%	\$129,327
Independent agent/independent B-D	46%	45%	46%	\$138,992
Full Service National B-D	17%	14%	17%	\$157,166
Bank	16%	16%	16%	\$134,116
Cost structure				
B-share	59%	69%	60%	\$136,140
L-share	27%	20%	26%	\$155,733
O-share	4%	10%	4%	\$112,931
C-share	2%	1%	2%	\$136,460
Contract value, EOY 2014 as percent of contracts issued				
Under \$25,000	11%	7%	11%	N/A
\$25,000 to \$49,999	15%	15%	15%	N/A
\$50,000 to \$99,999	26%	27%	26%	N/A
\$100,000 to \$249,999	34%	37%	34%	N/A
\$250,000 to \$499,999	11%	11%	11%	N/A
\$500,000 or higher	3%	3%	3%	N/A
Contract value, EOY 2014 as percent of contract value				
Under \$25,000	1%	1%	1%	N/A
\$25,000 to \$49,999	4%	4%	4%	N/A
\$50,000 to \$99,999	14%	14%	14%	N/A
\$100,000 to \$249,999	38%	40%	38%	N/A
\$250,000 to \$499,999	26%	26%	26%	
\$500,000 or higher	17%	14%	17%	
Average contract value, EOY 2014	\$137,526	\$138,661	\$137,642	N/A
Median contract value, EOY 2014	\$94,120	\$100,044	\$95,347	N/A
Average premium received in 2014	N/A	\$137,818	N/A	\$137,818
<p>Note: Percentages are based on number of contracts unless stated otherwise. Based on contracts still in force at EOY 2014. "Issued before 2014" based on 2,457,184 GLWB contracts; "Issued in 2014" based on 279,596 GLWB contracts; and "All contracts in force" based on 2,736,780 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

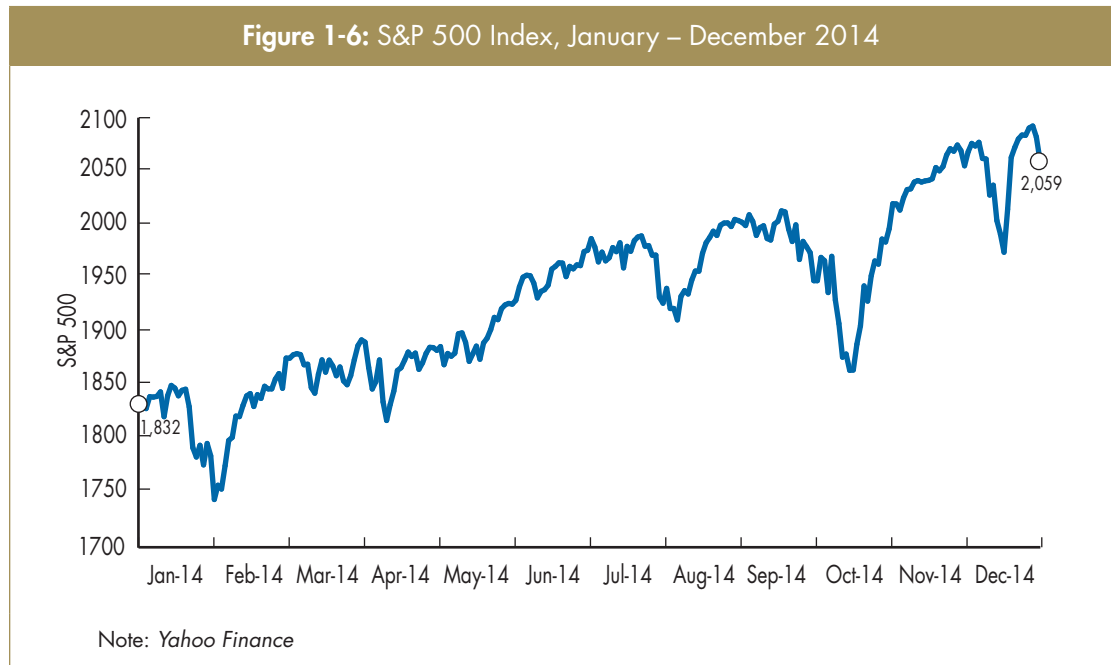
- B-share contracts are the most common cost structures (69 percent) while L-share contracts made up 20 percent of new issues in 2014. Sales of L-share contracts have dropped as some companies have put less of a focus on or stopped offering this share class.
- By EOY 2014, 1 in 4 in-force contracts with GLWBs had contract values between \$50,000 and \$99,999; one third had between \$100,000 and \$249,999; and 1 in 7 had \$250,000 or more. Although 50 percent of the contracts issued in 2014 had contract values of \$100,000 or more, these contracts constituted 81 percent of GLWB contract values at EOY.
- The average contract value for all GLWB contracts remained very attractive — \$137,642 at EOY 2014. The average GLWB contract value at EOY for contracts issued in 2014 was \$138,661. The average premium for 2014 issues was \$137,818.
- The average premium from contracts bought by males was 18 percent higher than from contracts purchased by females. The largest contracts were for older males who purchased IRA contracts through the full-service national B-D channel.
- The average nonqualified GLWB premium was \$137,418, almost identical to the average IRA GLWB premium.

Average premium for
GLWB contracts issued
in 2014 = **\$137,818.**
Median premium =
\$100,000.

Benefit Base

Calendar year 2014 saw the sixth consecutive year of growth in the equity markets (Figure 1-6). A weak employment report, combined with the downsizing of the Federal Reserve’s Quantitative Easing Program sent equities tumbling early in the first quarter, but equities rebounded through the third quarter based on positive news about the U.S. economy — including a robust GDP report at the end of July combined with declining employment figures. Equity markets were rattled with two noteworthy yet relatively short sell-offs in the fourth quarter; but November’s job report — which showed the strongest job growth since 1999 — combined with Federal Reserve comments on potential rate hikes in 2015 drove the S&P 500 total return to finish 2014 up 13.7 percent from the beginning of the year.

Figure 1-6: S&P 500 Index, January – December 2014



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

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

When analyzing the benefit bases of GLWBs, it is important to understand the details behind the equity market growth and volatility of 2014 as well as 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.

At beginning-of-year (BOY) 2014, 48 percent of contracts with GLWBs issued before 2014 had benefit base amounts that were greater than the contract value. At BOY, the average difference between the benefit base and the contract value was approximately \$3,500 for these contracts. On average, contract values were around 97 percent of the benefit bases across all contracts (Table 1-4). The median contract value was roughly \$2,700 lower than the median benefit base.

Table 1-4: GLWB Benefit Bases and Contract Values, at BOY 2014

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$331,989,012,523	\$323,662,470,416	97.5%
Average	\$138,811	\$135,329	97.5%
Median	\$95,663	\$92,962	97.2%
Percent of contracts where benefit base was greater than contract value			48%
Note: Based on 2,391,670 GLWB contracts issued before 2014 with GLWB benefit bases as of BOY and EOY 2014. Excludes contracts for which the GLWB benefit bases could not be determined.			

Contract value to benefit base at EOY 2014 = **94%** — down from **97%** at BOY.

With the investment returns less than most benefit base roll-up amounts (after expenses), the percentage of contracts that had benefit base amounts greater than contract values increased in 2014. At BOY, 48 percent of GLWB contracts had benefit base amounts greater than contract values; by EOY 2014, this grew to 76 percent of the contracts (Table 1-5).

Table 1-5: GLWB Benefit Bases and Contract Values, at EOY 2014

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$351,085,178,454	\$329,475,636,535	93.8%
Average	\$146,795	\$137,760	93.8%
Median	\$100,759	\$94,456	93.7%
Percent of contracts where benefit base was greater than contract value		76%	
Note: Based on 2,391,670 GLWB contracts issued before 2014 with GLWB benefit bases as of BOY and EOY 2014. Excludes contracts for which the GLWB benefit bases could not be determined.			

Overall contract values were roughly 94 percent of the benefit bases at EOY 2014. This ratio of benefit base to contract value is up from EOY 2008 (after the market plunge) when contract values were 73 percent of the benefit base amounts.⁷

At EOY 2014, the average benefit base stood at \$146,800 for all GLWB contracts. The average difference between the benefit base and contract value was \$9,000, more than 2½ times larger than the difference from BOY 2014. The average difference between the median benefit base and median contract value was \$6,300 at EOY.

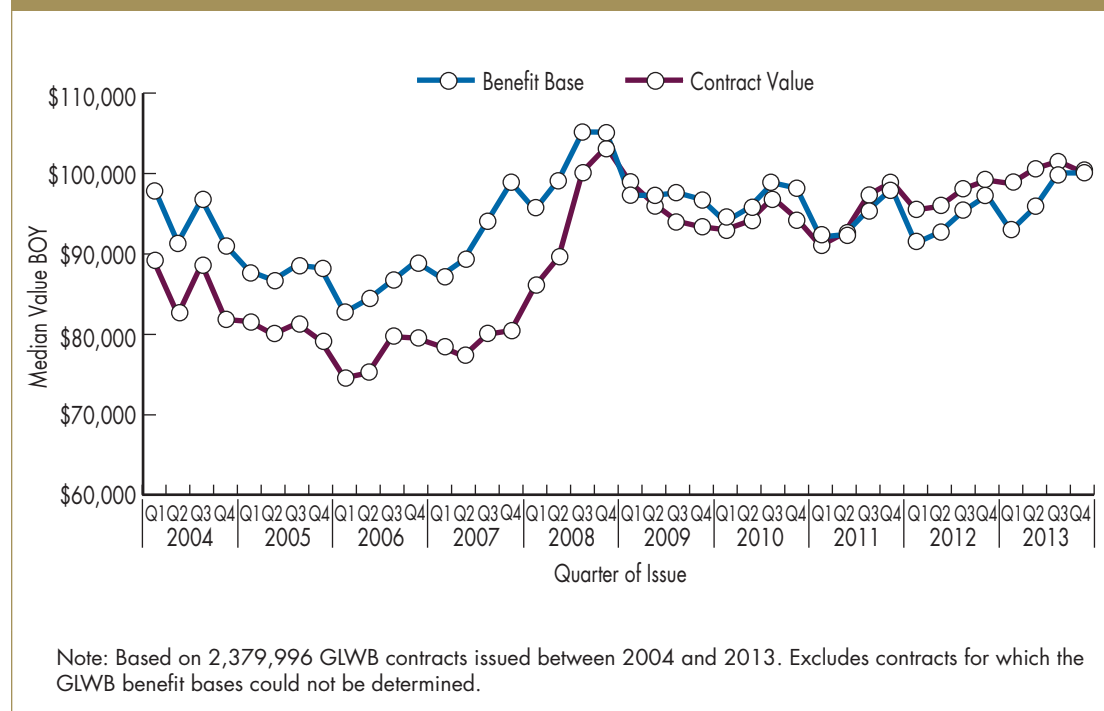
Benefit Base by Quarter and Year of Issue

When a contract was issued has an impact on if — and how much — the benefit base might exceed the contract value. 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 2012–2014.

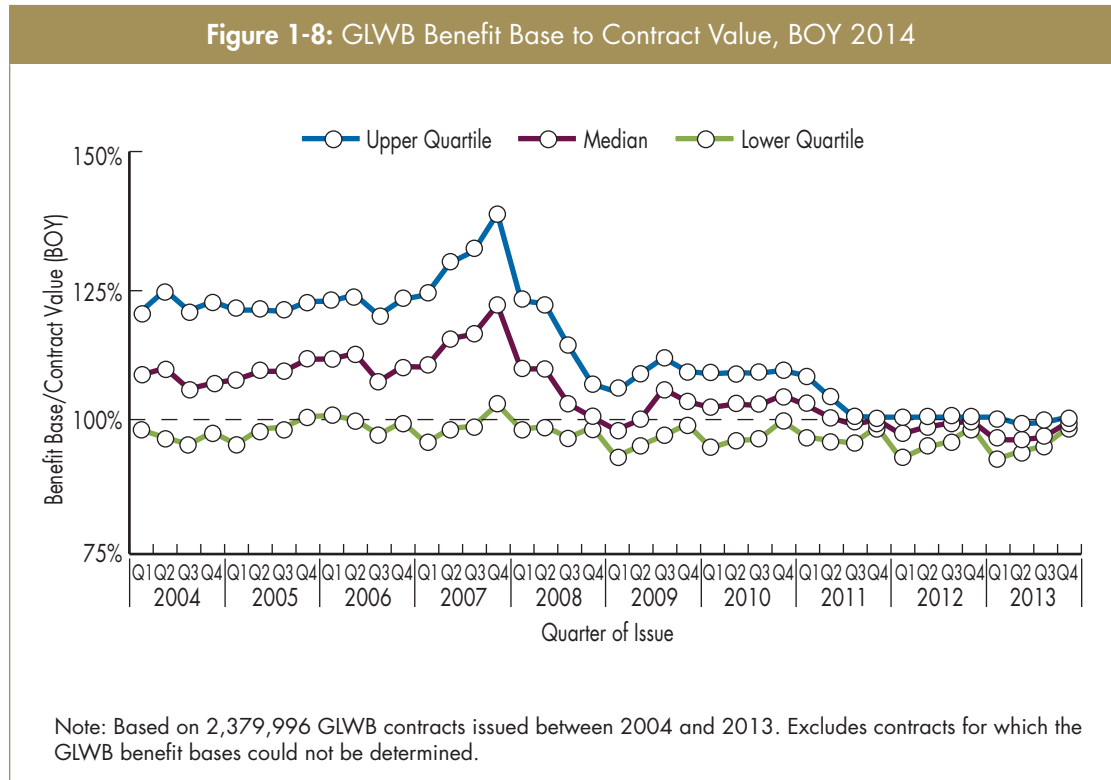
⁷ *Guaranteed Living Benefits Utilization — 2008 Data*, LIMRA Secure Retirement Institute, 2009.

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 1-7). 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 2014. Market losses and automatic benefit base roll-ups had the greatest impact on contracts issued in the second half of 2007, resulting in a larger 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.

Figure 1-7: GLWB Median Contract Value vs. Benefit Base, BOY 2014



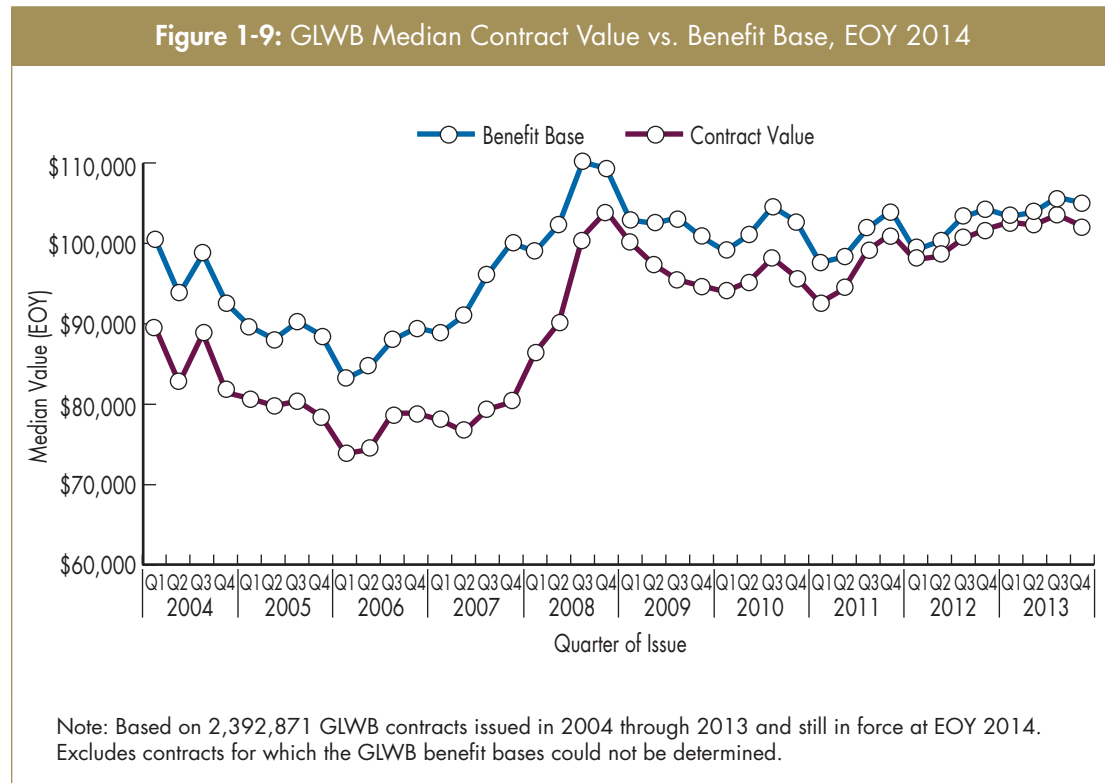
Looking at the quartile ranges of the benefit base to contract value (BB/CV) ratios, contracts issued before 2008 had the greatest deviations in BB/CV ratios (Figure 1-8).



The upper and lower quartiles refer to the distribution of BB/CV ratios at BOY 2014, not the distribution of contract values. The inter-quartile range gives a sense of how widely (or narrowly) the ratios are distributed. At BOY 2014 the median of contract value to benefit base ratios issued from Q1 2004 through Q4 2007 ranged from 105 to 121 percent.

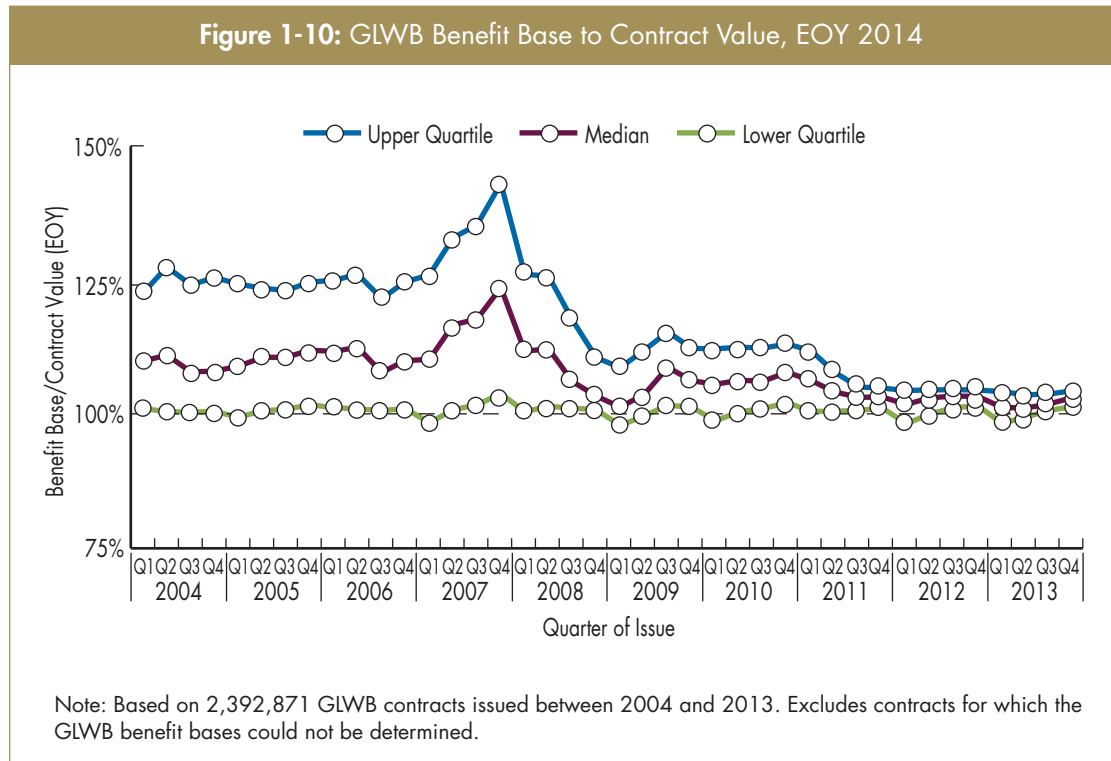
In addition, one quarter of contracts issued between 2004 and 2007 had ratios of 112 percent or more, and one quarter had ratios of 107 percent or less. As one would expect, the inter-quartile range narrows with decreasing duration (more recently issued contracts tend to have a tighter distribution) 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.

Despite the equity market growth, by EOY 2014, the relative relationship between benefit base and contract value expanded when compared to BOY (Figure 1-9). The median contract value increased from \$93,000 at BOY 2014 to \$94,500 at EOY, a gain of only 1.6 percent. At the same time, the median benefit bases increased 5.3 percent from \$95,700 at BOY to \$100,800 at EOY.



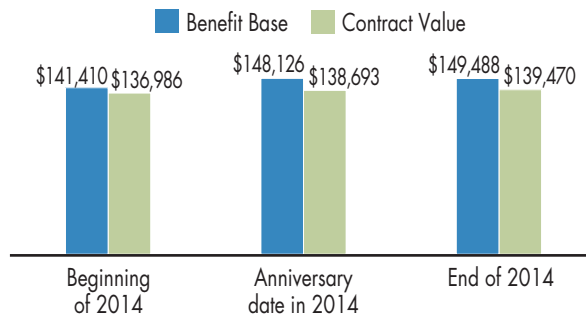
Double-digit equity market growth was muted by investment restrictions and fee loads. For contracts issued prior to Q4 2008, the gap remained substantial. One main reason is that contracts issued before Q4 2008 had richer benefit and roll-up features compared with contracts issued after the market crisis, when most benefits and roll-up rates were adjusted down considerably.

The inter-quartile analysis at EOY 2014 shows a slight increase in BB/CV ratios compared to BOY (Figure 1-10). The median ratios of benefit bases in contracts issued from Q1 2004 through Q4 2007 ranged from 107 percent to 123 percent at EOY.



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 \$137,000 at BOY to \$139,500 at EOY 2014, registering a growth of 1.8 percent (Figure 1-11). During this time, the average benefit base grew 5.7 percent from \$141,400 to \$149,500. On the contract anniversary date, the benefit base registered an increase of 4.7 percent from \$141,400 at BOY to \$148,100 on the anniversary date, mainly driven by deferral bonuses for non-withdrawals. At EOY 2014, there was a difference of \$10,000 between the average contract value and average benefit base.

Figure 1-11: GLWB Average Contract Values and Benefit Bases at BOY, on Anniversary Date, and at EOY 2014



Note: Based on 2,077,206 GLWB contracts issued before 2014 and still in force at EOY 2014. Excludes contracts for which the GLWB benefit bases (as of BOY, the contract's anniversary date, or EOY) could not be determined.

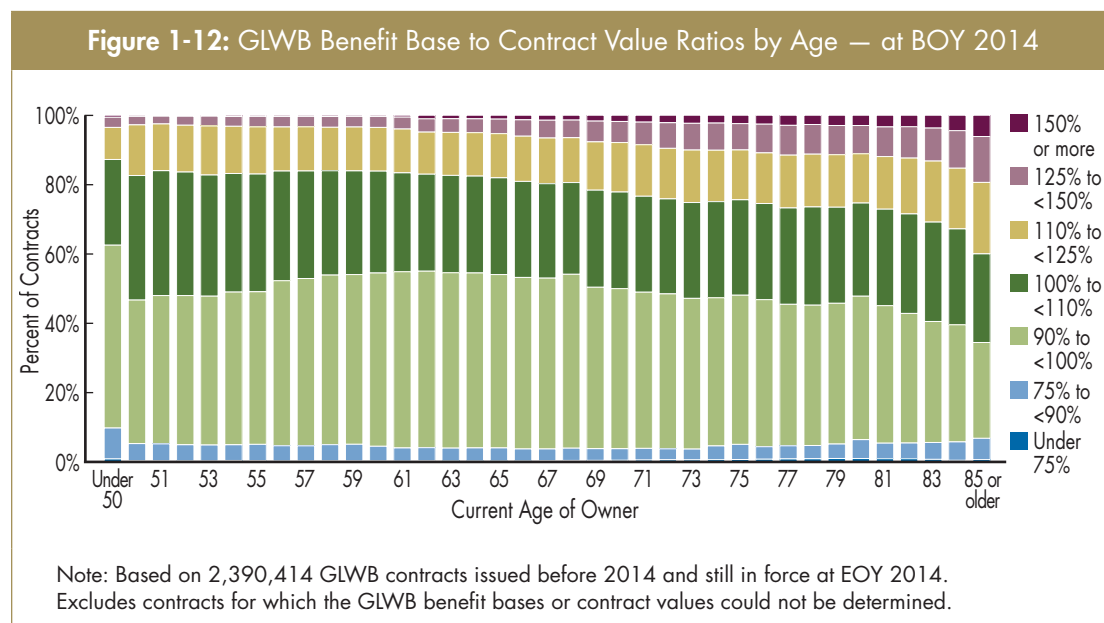
The benefit bases for these 2.1 million contracts totaled \$310.5 billion as of EOY 2014, compared with contract values of \$289.7 billion. Just over three quarters (78 percent) of the \$20.8 billion difference between benefit bases and contract values reflects contracts with account balances of \$100,000 or more, even though they represent only 49 percent of all contracts.

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 benefit base to contract value ratios. The BB/CV ratios are impacted by forces like the duration of contracts and the impact of market returns on the contract 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 contract values and benefit base. This analysis can offer insurance companies helpful indications of withdrawal risks associated with each age or age cohort, and comparisons with the industry. Our analysis shows that BB/CV ratios differ by age.

Three quarters of contracts had a BB/CV ratio between 90% and less than 110% at BOY.

Figure 1-12 shows the BB/CV ratios by age at BOY 2014. At BOY, for in-force contracts issued before 2014, 47 percent of contracts had BB/CV ratios of 90 percent to less than 100 percent, and very few contracts had a ratio below 90 percent. Three quarters (76 percent) had a BB/CV ratio of 90 percent to less than 110 percent.



This clustering around 100 percent was due to increased market performance in the prior year and the tendency of the benefit base to move in unison with the contract value due to step-ups for contracts that had no withdrawals. In addition, 14 percent of the contracts had benefit bases exceeding contract values by 110 percent to less than 125 percent. Only 7 percent of the contracts had BB/CV ratios of 125 percent or more.

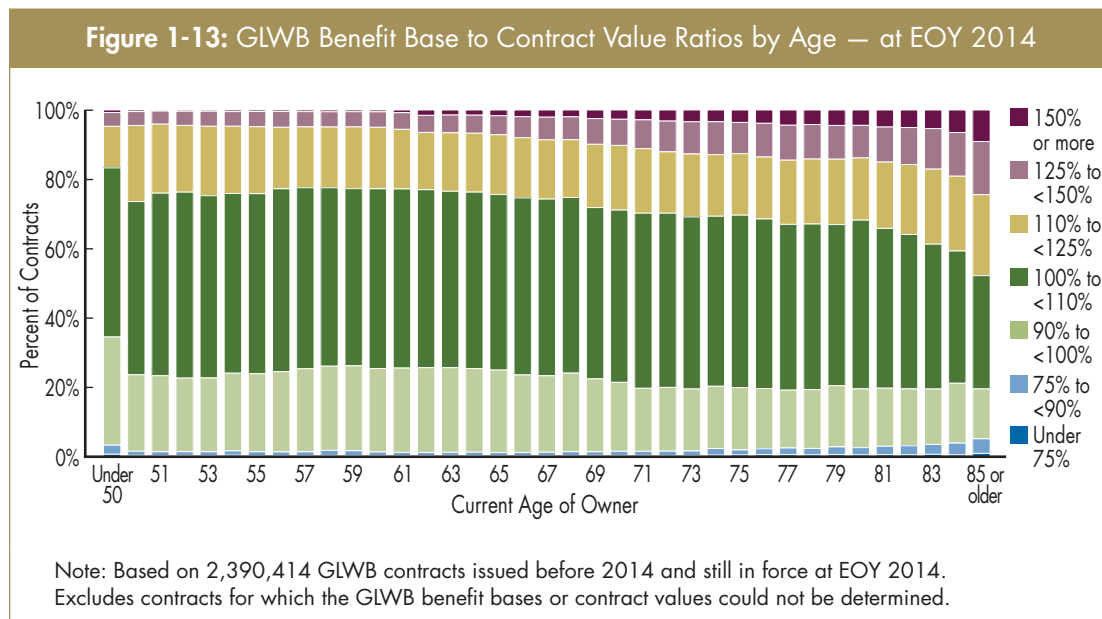
However, owners aged 70 or older had comparatively more contracts with BB/CV ratios of 125 percent or more (similar to what we have seen in past years). One in eight contracts with owners aged 70 to 79 — and 1 in 7 of the contracts with owners aged 80 or older — had BB/CV ratios of 125 percent or more. Though owners aged 70 or older constituted only 30 percent of all contract owners, almost half of all contracts with BB/CV ratios of 125 percent or more were within this age cohort. Older owners hold comparatively more contracts with higher BB/CV ratios because:

- They are more likely to own contracts for a longer duration of time. So these contracts are likely to have suffered from increased market volatility.
- Older owners — particularly those aged 70 or older — are more likely to take withdrawals over a longer period of time. Also, those funded with qualified money are required to begin taking withdrawals at age 70½. If their withdrawal amounts remain within the maximum

amount offered in the contract, their contract values may diminish due to the withdrawals while the benefit bases are likely to remain level and relatively high.

- 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 1-13 shows the distribution of BB/CV ratios by age at EOY 2014. The contracts with BB/CV ratios (less than 100 percent) have decreased from 51 percent at BOY to 24 percent by EOY.



At the end of 2014, 72 percent of the contracts had a BB/CV ratio of 90 percent to less than 110 percent. The biggest increase from the BOY in the BB/CV ratio was in the 100 percent to less than 110 percent range. The ratio increased from 29 percent in the beginning of the year to 50 percent by the end of the year. There was also an increase for contracts with a BB/CV ratio at or above 110 percent. The ratio for these contracts changed from 20 percent at the beginning of the year to 26 percent at the end of the year.

7 in 10 contracts had a BB/CV ratio between **90% and less than 110%** at EOY.

In addition, 16 percent of contracts held by owners aged 60 or younger had BB/CV ratios of 110 percent or above at BOY; the percentage of such contracts had increased to 23 percent by year end. At BOY, the BB/CV ratios of 24 percent of contracts held by owners aged 70–79 were

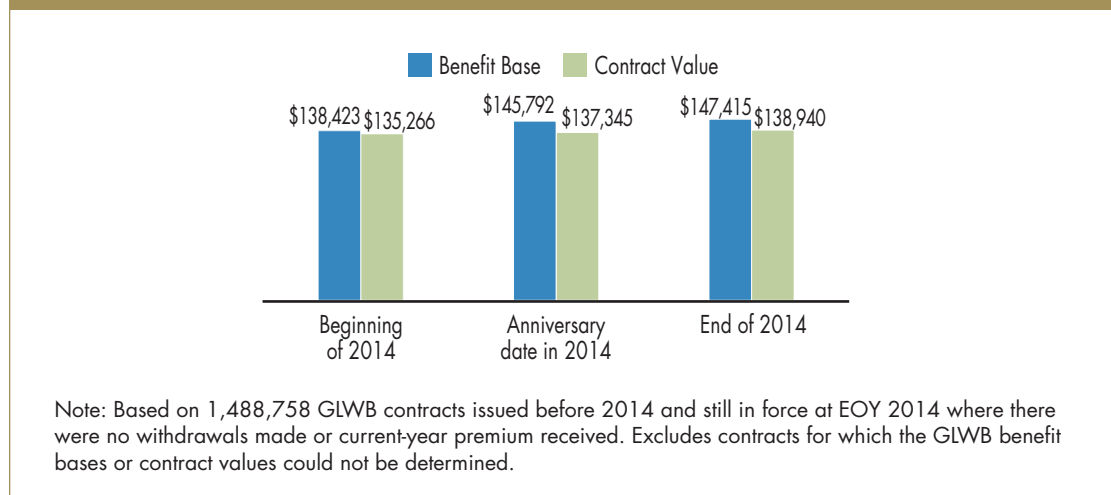
at 110 percent or higher; at EOY 2014, the BB/CV ratios of 31 percent of their contracts remained at that high level. For owners aged 80 or older, the percentage of contracts with BB/CV ratios of 110 percent or higher was 31 percent at BOY, and increased to 39 percent by EOY.

Benefit Base for Contracts With Withdrawals vs. Without Withdrawals

We can further expand our benefit base analysis to look at those contracts that had withdrawals compared with those that did not have withdrawals in 2014. When withdrawals are made from GLWB riders, in most cases the benefit base remains unaffected while contract values are reduced by the withdrawal amounts. One risk that exists with the contracts that utilize guaranteed withdrawal riders is that the contract 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 2014 that did not have withdrawals in 2014, the benefit base rose steadily from \$138,400, to \$145,800 on the contract anniversary date, to \$147,400 by year end, registering a 6.5 percent increase (Figure 1-14). This increase can be attributed mainly to auto-increases and step-ups of benefit bases for contracts with non-withdrawals. The average contract value of these contracts was \$135,300 at BOY 2014 which increased to \$138,900 by EOY, a gain of only 2.7 percent for the year. The difference between the benefit base and contract value at BOY was \$3,200, but increased to \$8,500 by EOY, representing 6 percent of the EOY contract value.

Figure 1-14: GLWB Average Contract Values and Benefit Bases for Contracts Without Withdrawals in 2014

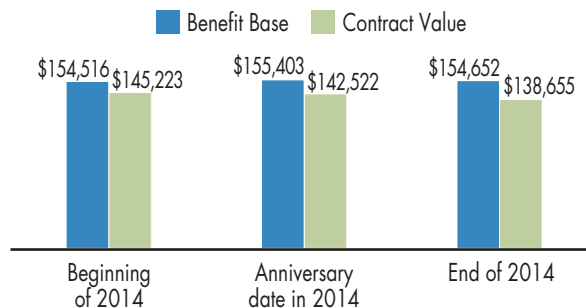


The difference between the benefit base and contract values was more prominent among contracts that incurred withdrawals in 2014 (Figure 1-15). The average benefit base remained relatively flat in 2014, driven in part by younger owners taking excess withdrawals. The average benefit base rose 0.1 percent from \$154,500 at BOY to \$154,700 at EOY. The market gains were not enough to offset the amount withdrawn, on average leading to a decrease in the contract value. The average contract value decreased 4.5 percent from \$145,200 at BOY to \$138,700 by EOY. The difference between the benefit base and the contract value at BOY was \$9,300 but rose during 2014. By EOY 2014, the gap had increased to \$16,000 or 12 percent of the ending contract value.

The difference between the average benefit base and average contract value for contracts without withdrawals was **6%** of EOY value.

The difference between the average benefit base and average contract value for contracts with withdrawals was **12%** of EOY value.

Figure 1-15: GLWB Average Contract Value and Average Benefit Base for Contracts With Withdrawals in 2014



Note: Based on 501,052 GLWB contracts issued before 2014 and still in force at EOY 2014 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 contract owners will continue to take withdrawals up to the maximum allowed under the terms of the benefit, or whether they will take benefits for life, is more difficult to determine. However, owners’ inclinations to take lifetime withdrawals are more obvious when they take withdrawals from a systematic withdrawal plan (SWP).

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.

Much of the present study is based on a single calendar year. However, in some sections we analyzed withdrawal activity over time. To try and assess overall withdrawal behavior, we asked companies to provide cumulative total withdrawals prior to 2014 (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.

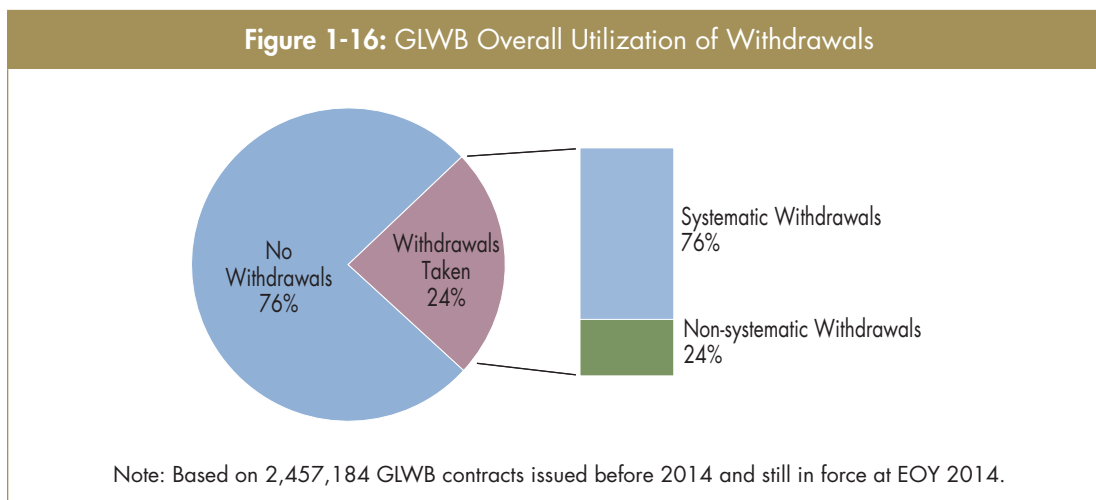
In this report, we emphasize five key determinants that will guide companies in understanding the intention of owners to use withdrawals as a lifetime income stream:

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

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

Overall Utilization for Contracts Issued Before 2014

For 2,457,000 VA contracts with GLWBs issued before 2014 and still in force at EOY 2014, only 24 percent had some withdrawal activity during 2014 (Figure 1-16). Three out of 4 of those were systematic withdrawals.



For contracts issued before 2014 and with withdrawals in 2014:

- The total withdrawal amount from GLWBs was \$6.5 billion, or 2.0 percent of assets in force at BOY.
- Among contracts with partial withdrawals, the median amount withdrawn was \$6,000, representing 6.0 percent of the median BOY contract value of \$100,308 in contracts that had withdrawals.
- The average withdrawal amount for contracts issued before 2014 that incurred withdrawals in 2014 was \$10,650. The average withdrawal rate was 7.3 percent based on the average BOY contract value of \$145,000. 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 who take partial surrenders may eventually surrender their contracts.

24% of all contracts had some withdrawal activity during 2014; **3 out of 4** used systematic withdrawals.

Median GLWB withdrawal amount in 2014 = **\$6,000.**

- 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 2013 with withdrawal activity in that year, 96 percent continued withdrawals in 2014. Our previous annual studies also found that a high percent of owners who start withdrawals continue those withdrawals in the following year — a strong indication that owners who commence withdrawals are likely to continue withdrawing for their lifetimes.
- The median systematic withdrawal amount was \$5,500, which amounts to 5.3 percent based on a BOY contract value of \$103,749.

Overall utilization rates have gradually increased for contracts in force for an entire year.

96% of GLWB customers who purchased their contracts in 2013 and took withdrawals in 2013 also made withdrawals in 2014. Owners who commence withdrawals are likely to continue withdrawing for their lifetime.

Based on a constant group of 13 companies that participated in LIMRA's VAGLB Utilization Study from 2009 to 2014, overall utilization rates have gradually increased for contracts in force for an entire year. Utilization rates in 2009 were 17 percent for contracts issued before 2009 and remaining in force that year; utilization rates in 2010 were 21 percent for contracts issued before 2010 and remaining in force that year; utilization rates in 2011 were 22 percent for contracts issued before 2011 and remaining in force in 2011. The GLWB utilization rates were 23 percent for contracts issues before 2012 and remaining in force that year. The GLWB utilization rates in 2013 were 26 percent for contracts issued before 2013 and remaining in force at EOY 2013. The GLWB utilization rates in 2014 were 27 percent for contracts issued before 2014 and remaining in force at EOY 2014.⁸ In 2009, the overall utilization rate was slightly lower because of relaxation of RMD rules that year due to economic hardship.

⁸ Some of the increase in withdrawal activity over the past several years can be attributed to the aging of the GLWB block of business, as new issues to younger buyers has slowed. Using the same constant group of companies, the average age of GLWB owners increased from 59 in 2009 to 63 in 2014; the proportion of owners age 70 or older increased from 20.5% in 2009 to 28.2% in 2014.

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. 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 65, and 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.⁹

The overall utilization rate for GLWB contracts over the past few years has slowly increased, with 2014 utilization up to 24 percent. However, this is only one of several measures and this statement alone without the context of the other factors we have mentioned could be misleading. The next few pages will address some of the other factors that have an impact on GLWB owner withdrawal behavior.

⁹ *Guaranteed Income Annuities* — LIMRA Secure Retirement Institute, 2010.

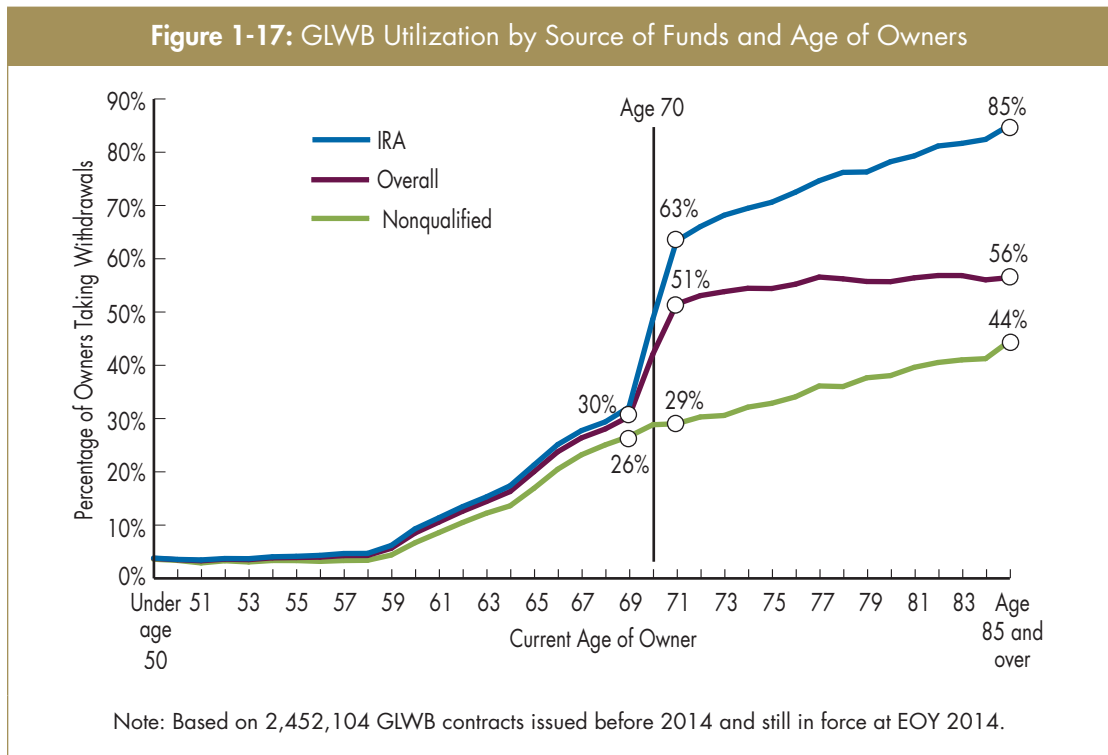
Withdrawal Activity by Source of Funds

Just over **7 out of 10** VA GLWB owners over age 70 are taking withdrawals from their qualified annuities.

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 2014 GLWB utilization rate is quite high for older customer segments (Figure 1-17).

Figure 1-17: GLWB Utilization by Source of Funds and Age of Owners



The withdrawal behavior of GLWB owners can be categorized into three life stages: pre-retirement, entering retirement, and RMD. Up to age 60, when most owners are not retired, withdrawal rates for customers who use either qualified or nonqualified 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 ages 60 and 70 — sometimes termed as the transition ages in retirement — few customers are fully utilizing the withdrawal benefits.

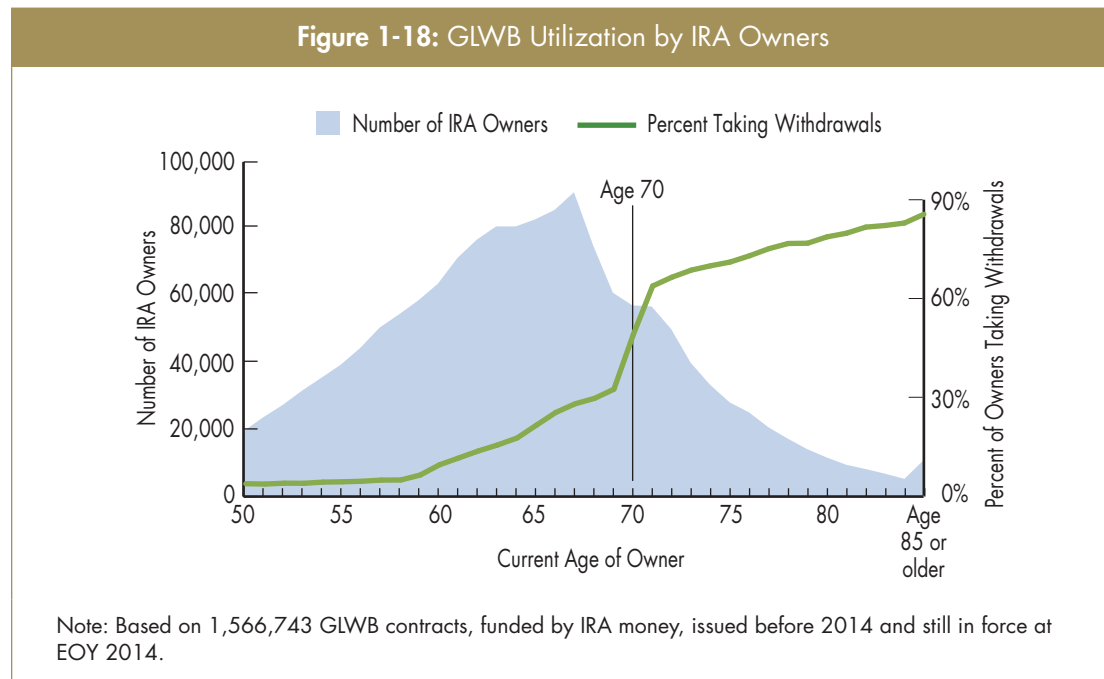
After age 70½, qualified annuities force owners to take RMD withdrawals. As a result, the percent of customers with withdrawals quickly jumps to 63 percent by age 71 and slowly rises to 85 percent for ages 85 and older. Seventy-one percent of VA GLWB owners over age 70 take withdrawals from their qualified 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 1-18). While 71 percent of contracts issued before 2014 that are owned by individuals under age 70 were funded with qualified money, almost half (44 percent) of the contracts owned by customers age 70 or above are nonqualified.

A shift will take place as **nearly half** of owners of qualified annuities (aged 60–69 today) will have to take withdrawals over the next decade due to RMDs.

Figure 1-18: GLWB Utilization by IRA Owners



The distinction between qualified and nonqualified sources of funds is important for several reasons.

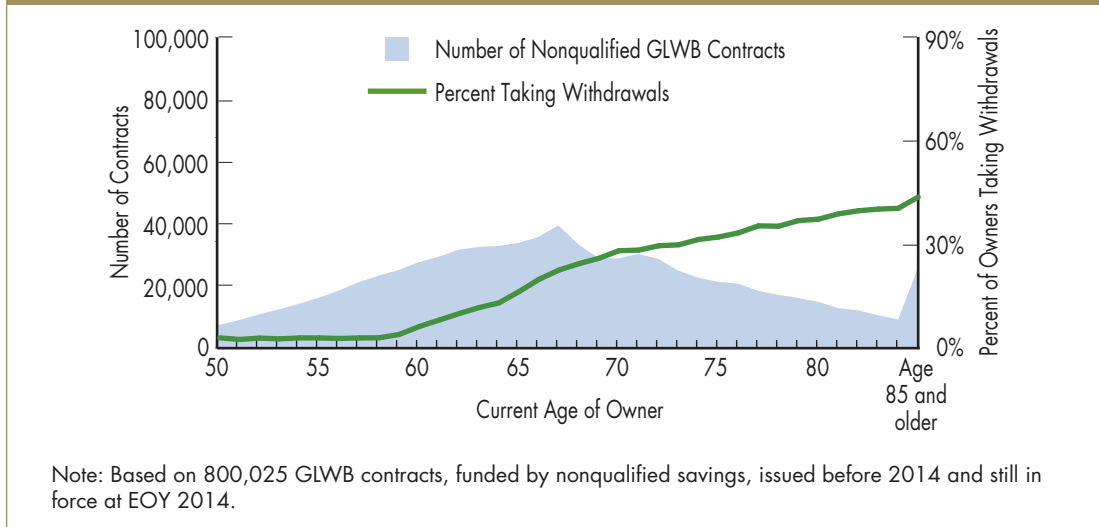
- Overall withdrawal activity — even the composite withdrawal activity by age cohort — is not a reliable measure of actual risk. The measure is particularly skewed downward because the majority of current GLWB owners are under age 70, and most of them have not yet started withdrawals.
- In the 2014 study, only 398,000 GLWB owners aged 70 or over funded their contracts with qualified money. They represent only a quarter of all GLWB owners who funded their annuities with qualified savings. In the next decade, another 48 percent of owners (more than 779,000) currently between ages 60 and 69 will reach age 70 and a majority of them will take withdrawals from their contracts to meet RMDs.

In 2014, only **a quarter** of current qualified owners were aged 70 or above and **nearly three quarters** of them took withdrawals. In the next 5 years, another **quarter** will reach RMD age.

- In 2014, nearly three quarters (71 percent) of owners aged 70 or older, who funded their GLWB contracts with qualified savings, took withdrawals. In comparison, only 25 percent of IRA owners aged 65–69 took withdrawals. The need to take RMDs will essentially drive withdrawal behavior for contract owners, and the more a company's customer mix is weighted with qualified contract owners, the more carefully it needs to manage its book of business.

In comparison, 38 percent of nonqualified annuity owners were aged 70 or above. The percent of nonqualified owners taking withdrawals in this age group was 34 percent in 2014, roughly half of the percentage of owners withdrawing from their qualified annuity (Figure 1-19).

Figure 1-19: GLWB Utilization by Owners With Nonqualified Funds



Today, sizeable proportions 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.

Taking First Withdrawals

One of the important value propositions for GLWB annuities is the ability to create guaranteed lifetime income. To better understand owners' inclinations to take lifetime withdrawals, we have analyzed owner withdrawal behavior by considering at what age or in what year of annuity ownership owners are likely to initiate their first withdrawal. We also look at how many will continue taking withdrawals once they start doing so. Extending that logic, we might expect to find corollary relationships among other variables, like when owners decide to take their first withdrawals, whether their withdrawal amounts remain within or around the prescribed withdrawal maximum amount allowed in the contract, or whether the persistency of these contracts differs from contracts that have not had withdrawals or excess withdrawals.

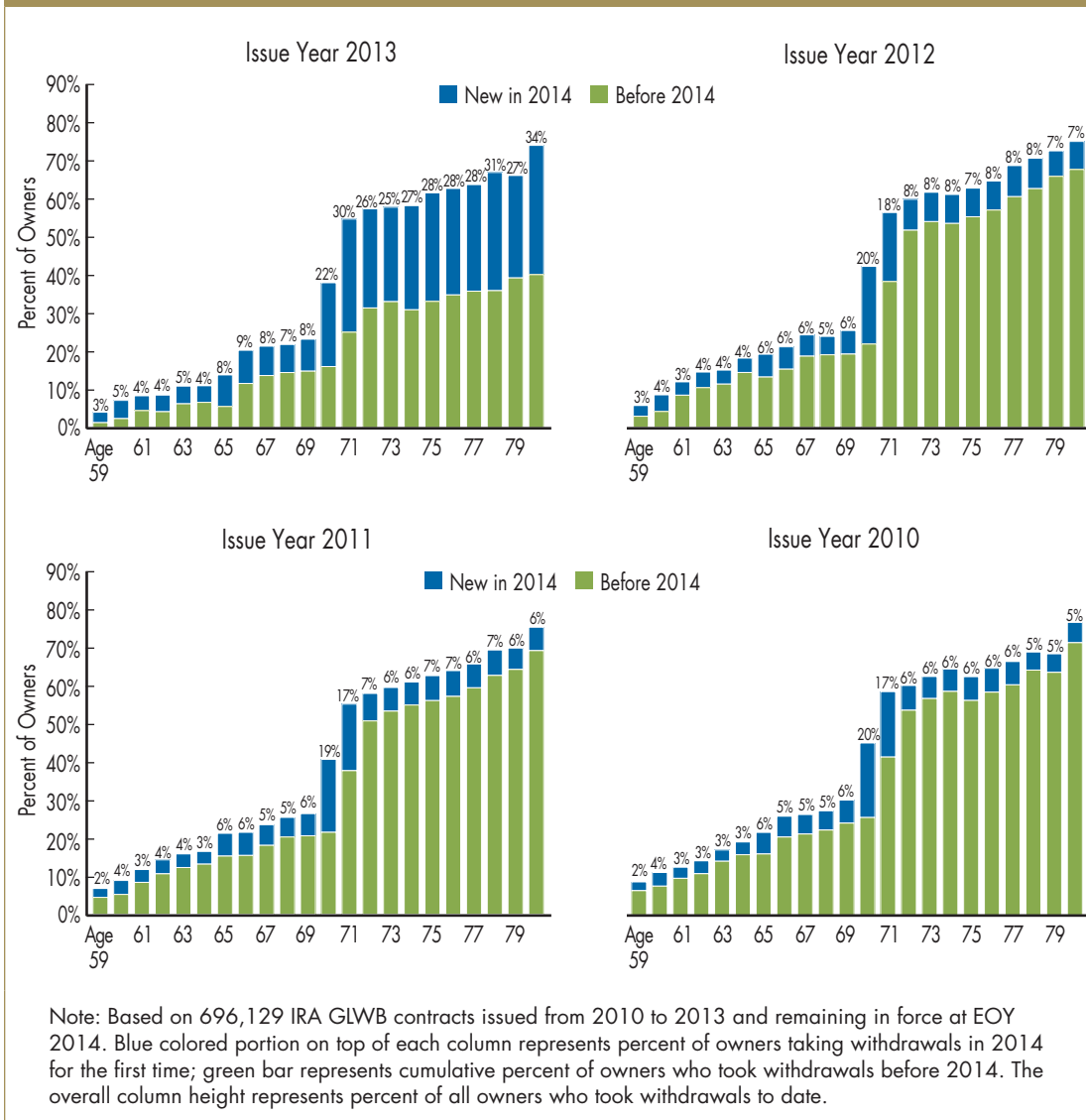
Analysis of when owners are likely to take first withdrawals provides important information on withdrawal risks of these contracts. These findings can help insurance companies to assess risk more precisely by identifying clusters of owners who are likely to start withdrawals in their first year, second year, etc. after the purchase. The first withdrawal activity analysis can be done in a few different ways: First, we determine the percentage of owners who initiated their first withdrawals in 2014, by age, source of money and issue year, to provide various trends and relationships. Second, we explore how sensitive the first withdrawal activities are to the potential increases in guaranteed annual withdrawal percentages, typically determined by age bands prescribed in the GLWB contracts. In other words, do owners take advantage of the maximum guaranteed withdrawal rates occurring in the current year or wait if the withdrawal percentage amount is set to increase in the next year? Third, we analyze the first withdrawal history for owners from a particular issue year, and track how age and sources of money influence their first withdrawals. Finally, we will extend this analysis for owners who take withdrawals through SWPs.

Taking First Withdrawal From IRA Annuity in 2014

For IRA contracts issued in 2013, just over **1 in 4 owners** aged 70 and older took their first withdrawals in 2014.

There is a distinct pattern of withdrawal behavior from IRA-funded GLWB annuities, principally driven by age and the need to take RMDs. Figure 1-20 shows the percent of owners taking their first withdrawals in 2014 by each of the last four issue years from 2010 to 2013.

Figure 1-20: GLWB First Withdrawals in 2014 (IRA Contracts Only)



For many of the 2013 buyers, 2014 was the first complete year they owned their annuities and also the first year of their withdrawals. Only a small percent of the 2013 buyers under age 70 took their first withdrawals in 2014. However, the percentage of owners taking their first withdrawal jumps at ages 70 and older. The reason more owners over age 70 took withdrawals in 2014 is that many IRA annuity owners deferred their RMD withdrawals in 2013, because they may have already taken RMD withdrawals before purchasing the contracts or funded RMDs from other qualified investments. We have also provided data showing first withdrawals for contracts issued in 2010–2012. They follow a similar pattern as contracts issued in 2013 except they do not have the large increase in contracts taking their first withdrawals for owners over age 71.

Many insurance companies provide tools to assist GLWB buyers who 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.

For IRA contracts, age and the need to take RMDs are the principal drivers for withdrawals. In Table 1-6, we assessed the percentage of IRA owners taking their first withdrawal in 2014 around age 70½ (when RMD withdrawals must begin for qualified contracts) .

Table 1-6: GLWB Percentage of IRA Owners Taking First Withdrawal in 2014

	Contracts Issued in 2010	Contracts Issued in 2011	Contracts Issued in 2012	Contracts Issued in 2013
Attained Age during 2014	4 – 4.9 years	3 – 3.9 years	2 – 2.9 years	1 – 1.9 year
Under age 69	5%	5%	5%	8%
Age 68.5	5%	5%	5%	8%
Age 69.5	10%	10%	12%	12%
Age 70.5	28%	28%	29%	36%
Age 71.5	8%	9%	9%	28%
Age 72 and over	6%	6%	8%	27%

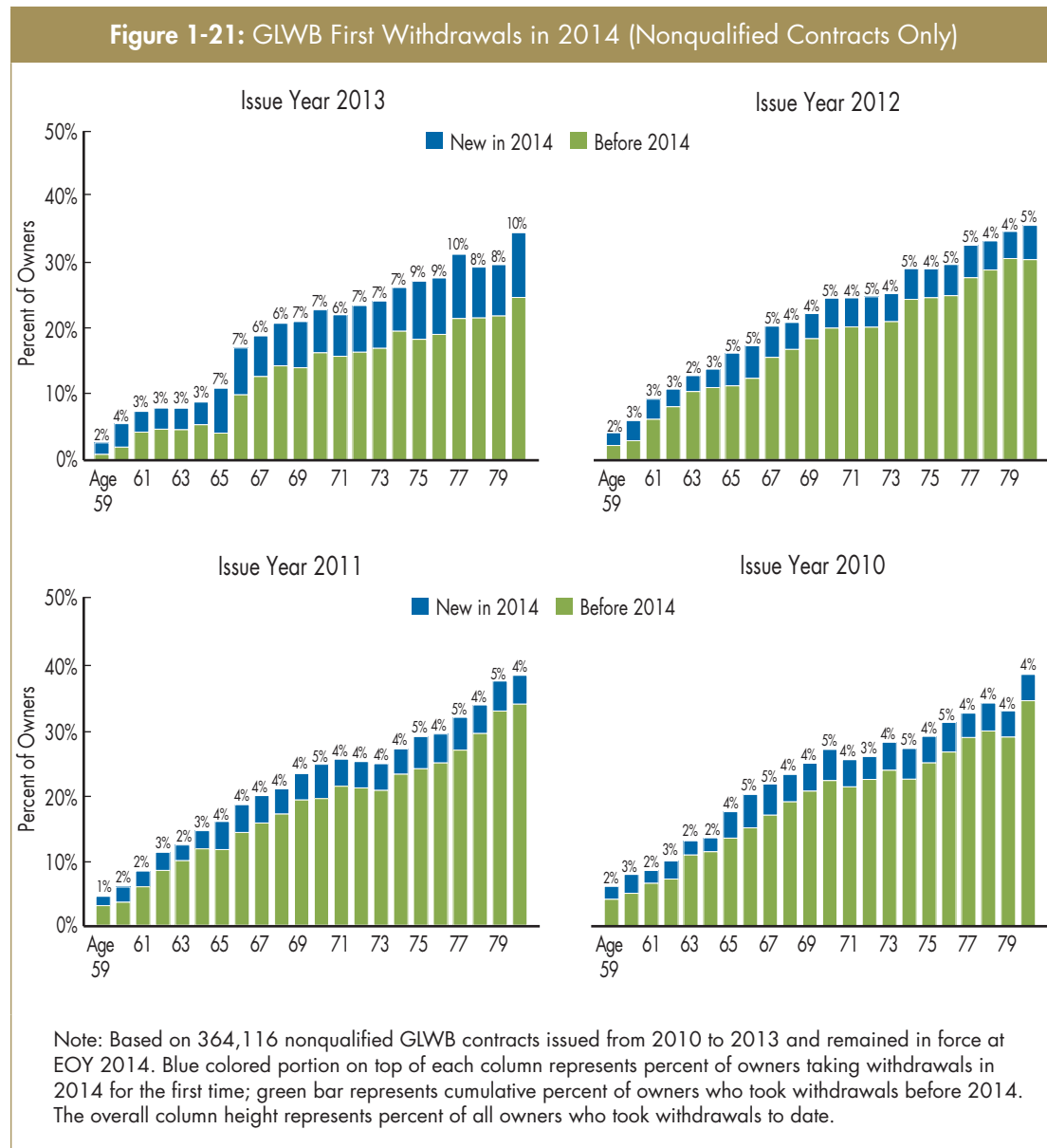
Note: Based on 696,129 IRA GLWB contracts issued from 2010 to 2013 and remaining in force at EOY 2014.

A few highlights from Table 1-6 include:

- The percentage of owners under age 69 taking their first withdrawals in 2014 for contracts issued in each of the last four years was nearly identical: a range of 5 to 8 percent.
- Around 1 in 10 qualified owners turning age 69½ took withdrawals.
- Due to RMDs, the percent of owners taking their first withdrawals around age 70½ jumps to a range of 28 to 36 percent.
- For owners aged 71½ and older, just over 1 in 4 took their first withdrawal for contracts issued in 2013. For all other issue years, the percentage taking their first withdrawals drops to around 6 to 9 percent.

Taking First Withdrawal From Nonqualified Annuity in 2014

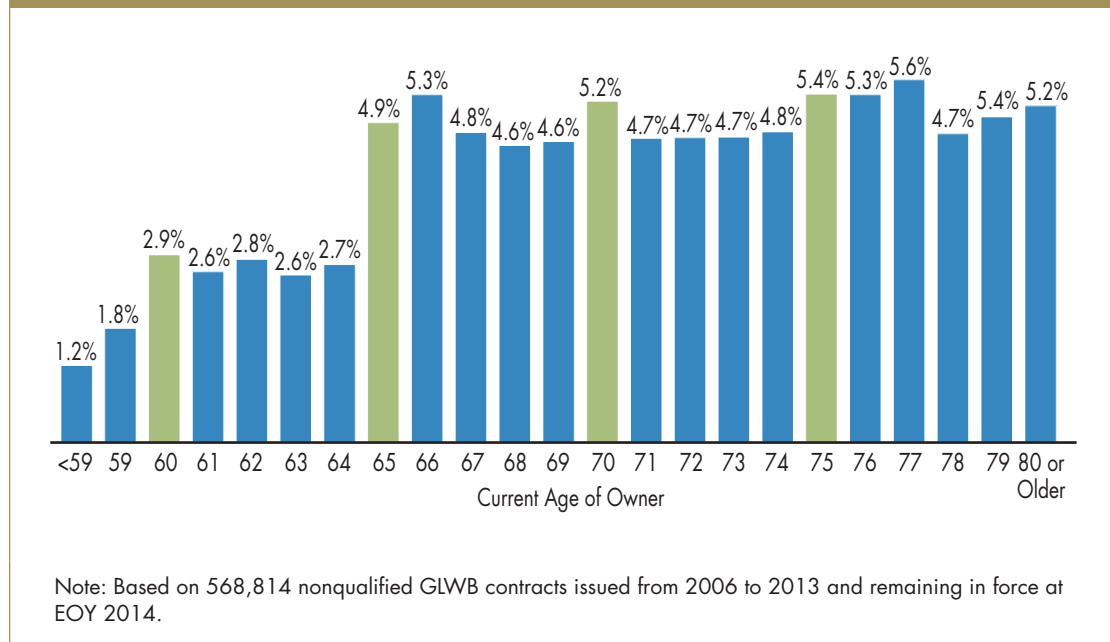
The percent of nonqualified annuity owners taking their first withdrawals in 2014 reflects a more streamlined withdrawal behavior. Figure 1-21 shows the percent of nonqualified owners taking withdrawals in 2014 by individual issue years from 2010 to 2013.



Because there is no need to take RMDs, the percent of nonqualified owners taking first withdrawals increases in a slow, linear way based on age. Only a small percent of owners aged 70 or under took their first withdrawals in 2014. The percent of owners taking withdrawals rises slightly with each increment in age; however, it remains roughly within a range of 1 to 7 percent, similar to the behavior we saw with IRA owners under age 70.

More GLWB contracts offer age-banded withdrawal rates that increase based on the age of the client at first lifetime withdrawal. Typically, these age bands are in five-year increments. The pattern in Figure 1-22 suggests some nonqualified owners wait until the next step-up in the annual withdrawal percentage before taking withdrawals, usually at ages 60, 65, 70, and 75. There are noticeable increases at each step-up when owners begin taking their first withdrawals. The percentage of owners taking their first withdrawals tends to remain relatively stable within the age bands. For example, the percentage of owners aged 71 to 74 taking their first withdrawals ranges from 4.7 percent to 4.8 percent.

Figure 1-22: Percentage of Nonqualified Owners Taking First Withdrawal in 2014



The rate of increase of the percent of customers taking their first withdrawals from nonqualified annuities is somewhat lower for contracts issued before 2013. The percent of 2013 buyers who had completed at least one full year of annuity ownership took their first withdrawals in a range of 2 to 10 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 2012, 2011, and 2010 buyers who took their first withdrawals ranged from 1 to 5 percent.

Only 29 percent of 2010-2013 buyers aged 75 took any withdrawals from their nonqualified annuity.

Table 1-7: GLWB Percentage of Owners Taking First Withdrawal in 2014 (Nonqualified)

Turning to Age	Contracts Issued in 2010	Contracts Issued in 2011	Contracts Issued in 2012	Contracts Issued in 2013
Duration	4 – 4.9 years	3 – 3.9 years	2 – 2.9 years	1 – 1.9 year
Age 59–69	2% – 5%	1% – 4%	2% – 5%	2% – 7%
Age 70 and over	3% – 5%	4% – 5%	4% – 5%	6% – 10%

Note: Based on 364,116 nonqualified GLWB contracts issued from 2010 to 2013 and remained in force at EOY 2014.

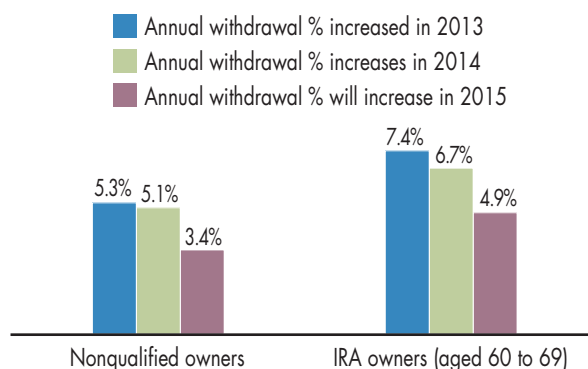
To summarize: for nonqualified contracts, age and contract duration are the principal drivers for withdrawals. A small percent of customers, in the single digits, take their first withdrawals every year.

Possible Effect of Potential Step-Ups in Guaranteed Annual Withdrawal Rates on First withdrawal Activity

Most GLWB contracts provide owners with a step-up in guaranteed annual withdrawal rates based on certain age bands or owners reaching a certain age, e.g. age 60, 65, 70 or 75 — if they wait to initiate their first withdrawals until obtaining these ages. If owners are sensitive to the potential increase in maximum annual withdrawal percentage, then they will wait until after they have reached one of the ages where the maximum percentage increases. For example, if the owner reached age 65 in 2014, they might be expected to initiate their first withdrawal activity in 2014 after obtaining age 65 to take advantage of the higher annual income. On the other hand, if an owner is currently aged 64, the owner may wait until they obtain age 65 if a step-up in annual withdrawal percentage is to occur at age 65.

Our analysis of a sub-set of owners who are in close proximity to reach an age threshold (one year before, current year, and one year after) when a step up in annual guaranteed withdrawal rates can occur shows that some owners do wait to initiate their first withdrawals and take advantage of higher annual guaranteed withdrawal rates offered on certain age thresholds in the GLWB contracts (Figure 1-23).

Figure 1-23: Percentage of Owners Taking First Withdrawals in 2014 Based on Proximity to Potential Annual Withdrawal Rate Increase



Note: Based on 113,655 nonqualified and 142,875 IRA-GLWB contracts issued before 2014, still in force at year-end 2014 and with no withdrawal activity before 2014. The IRA owners were between age 60 to 69 to exclude the influence of RMD rules.

For both qualified and non-qualified owners, the percentage of owners initiating their first withdrawals in 2014 are noticeably higher for owners who reached their age-thresholds in 2013 or in 2014 than for owners who are expected to reach their age thresholds to higher annual withdrawals in 2015. The tendency to wait for higher annual withdrawal percentages is similar for both owners who selected an SWP and those who took withdrawals on an ad-hoc basis in 2014.

First 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 behavior. Table 1-8 shows the withdrawal behavior of 2007 IRA buyers aged 57 to 75 from 2007 to 2014 (8 years of withdrawal history), and what percent of those buyers began taking their first withdrawals from 2007 to 2014.

Table 1-8: GLWB First Withdrawals for 2007 Buyers (IRA)

		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	All Ages*
Age 57		3%																			
Age 58		2%	2%																		
Age 59		3%	4%	5%																	
Age 60		7%	7%	6%	8%																
Age 61		5%	5%	5%	6%	9%															
Age 62		5%	5%	5%	6%	6%	12%														
Age 63		5%	5%	4%	5%	5%	7%	11%													
Age 64		4%	5%	4%	5%	5%	5%	7%	11%												
Age 65			7%	7%	8%	8%	9%	7%	8%	13%											
Age 66			6%	7%	8%	7%	9%	8%	9%	16%											
Age 67				5%	6%	7%	7%	8%	7%	8%	15%										
Age 68					4%	5%	6%	6%	7%	6%	7%	16%									
Age 69						5%	5%	6%	6%	8%	7%	9%	18%								
Age 70							17%	19%	19%	20%	23%	9%	25%	28%							
Age 71								15%	17%	18%	20%	33%	9%	32%	35%						
Age 72									4%	5%	6%	8%	21%	5%	27%	37%					
Age 73										3%	3%	5%	6%	10%	4%	25%	35%				
Age 74											3%	4%	4%	5%	9%	4%	29%	40%			
Age 75												3%	3%	4%	5%	10%	4%	25%	37%		11%
Age 76													3%	3%	4%	5%	10%	4%	28%		9%
Age 77														2%	3%	4%	4%	10%	5%		5%
Age 78															2%	3%	4%	5%	9%		7%
Age 79																2%	2%	5%	5%		6%
Age 80																	2%	2%	4%		6%
Age 81																		2%	3%		5%
Age 82																				2%	5%
Cumulative		35%	39%	44%	50%	51%	56%	68%	80%	83%	85%	85%	87%	88%	89%	90%	89%	91%	92%	93%	54%
Percent of owners taking withdrawals in all subsequent years		71%	74%	77%	79%	79%	82%	83%	87%	89%	89%	89%	89%	83%	77%	75%	78%	75%	76%	74%	79%

Note: Based on a constant group of 81,080 IRA contracts issued in 2007 and still in force at EOY 2014. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred between 2007 and 2013, and withdrawals continued every year through 2014.
*All ages analysis includes all ages reported, including ages not shown in the chart.

Table 1-8 shows an analysis of eight years of first withdrawal history of 2007 owners, and reveals some important insights:

- Overall, just over 1 in 10 owners initiated their withdrawals in the same year they purchased their annuity.
- The percentages of owners taking their first withdrawals in subsequent years are typically lower than in the first year, as the number of owners who have not taken withdrawals diminishes.
- Once owners initiate withdrawals, nearly 80 percent continue to take withdrawals in all subsequent years.
- More than 89 percent of owners aged 70 or above have taken withdrawals from their annuities in the last eight years. Across all ages, over half (54 percent) have taken withdrawals. This is particularly noteworthy because just under half were aged 60 or below in 2014 and a majority of them are not yet in or near retirement.
- Whether or not the benefit base exceeded the contract value for the contract had very little impact on first withdrawal behavior (addressed later in this chapter). From 2009 to the beginning of 2012, most GLWB contracts had benefit base amounts that exceeded the contract value. However, the percentage of owners taking withdrawals from their contracts does not show any deviation from the general trend, by any particular age or age groups. Even in 2009 — when most of the contracts had benefit base amounts that exceeded the contract values and the IRS restriction on RMDs was eased — relatively few owners took their first withdrawals.

The first withdrawal pattern is somewhat unique in the first and second years, but then follows a relatively similar pattern for years 3-8. In the first year, withdrawals are in the low single digits below age 60, climb to almost 1 in 5 by age 69, jump to 1 in 4 at age 70 and 1 in 3 at age 71, and then remain around 1 in 3 for ages 72 and over. In the second year, withdrawals remain in the single digits until age 69, then they jump to 1 in 4 at age 70 and 1 in 3 at age 71, and then remain around 1 in 4 for ages 72 and over. For years 3-8, withdrawals remain in the single digits until age 69, then they jump to around 1 in 5 for ages 70 and 71, and then return to the single digits for ages 72 and over.

If we avoid the anomaly in 2009, there is a consistent owner withdrawal behavior defined by 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 2013, with withdrawals continuing every year through 2014.

For example, 89 percent of 68-year-old owners who purchased their IRA annuities in 2007 took their first withdrawals between 2007 and 2013, and continued to take withdrawals every year through 2014. 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.

Overall, similar to IRA annuities, nearly 10 percent of owners initiate withdrawals from their non-qualified annuities in their first year of ownership.

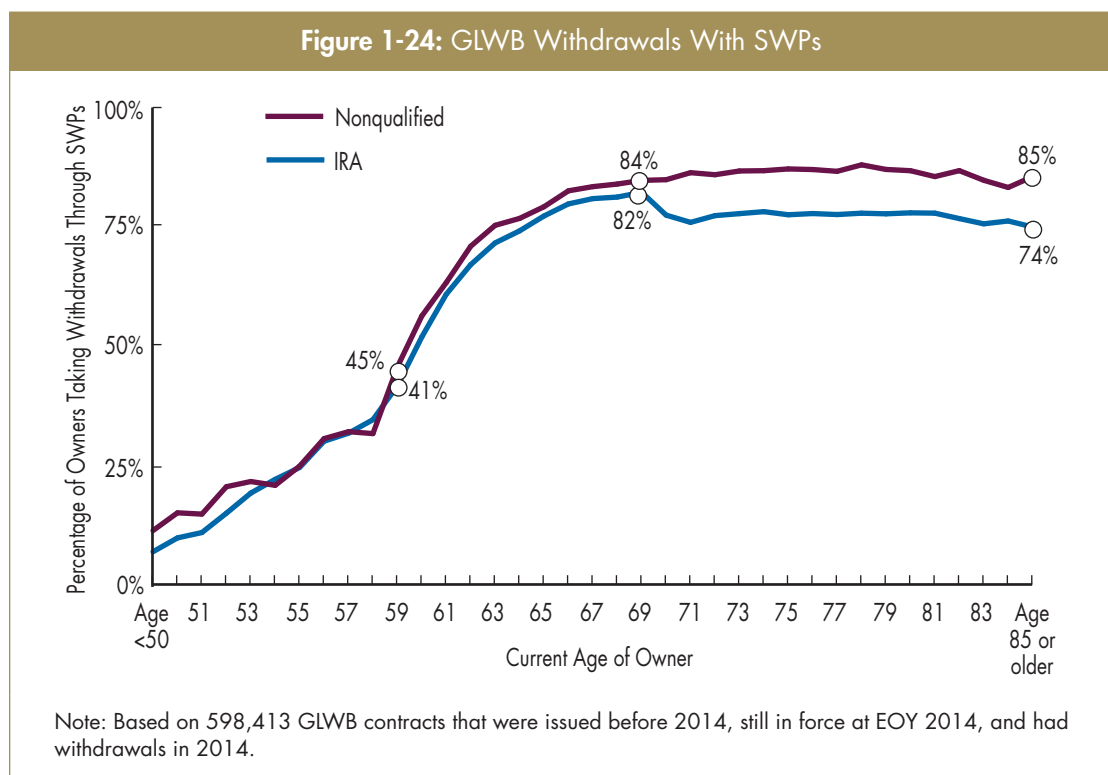
- Also like IRA annuities, once non-qualified owners start taking withdrawals nearly 80 percent are very likely to continue withdrawals in all subsequent years.
- We also see no or little impact on withdrawal behavior for contracts where the benefit base exceeded the contract value during the last four years after the market crisis, when a majority of contracts had benefit base amounts that were greater than the contract values (discussed later in this chapter).

After the first year, approximately 2 to 9 percent of owners aged 60 and older take 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 years 2009 through 2014. In 2014, the percent of owners across all ages who took withdrawals, remained within a band of 2 to 6 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 use SWPs to receive their regular withdrawals.

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. Most 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, 76 percent of owners took withdrawals using an SWP (Figure 1-24).¹⁰ Seventy-four percent of IRA owners and 82 percent of nonqualified owners who took withdrawals in 2014 used an SWP. At age 50 only 10 percent of IRA owners and 15 percent of nonqualified owners who took withdrawals in 2014 used SWPs. The rest of the owners took occasional withdrawals.



¹⁰ The main reason for the slight drop in the percentage of IRA owners taking withdrawals through SWPs involves the classification of RMDs. Some companies did not consider RMD withdrawal activity to be a type of systematic withdrawal.

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 quarter of owners under age 60 who took withdrawals, either from qualified or nonqualified GLWBs, used an SWP. Forty-two percent of the owners aged 59 used SWPs.
- From ages 60 to 69, 76 percent of qualified owners and 79 percent of nonqualified owners used SWPs for withdrawals in 2014.
- After age 69 owners were very likely to use SWPs — 77 percent of qualified owners and 86 percent of nonqualified annuity owners. The percent of nonqualified owners using SWPs reached more than 80 percent for owners in their mid-80s.

The median withdrawal amount for those taking just an SWP in 2014 was \$5,511 and the average was \$8,167. Table 1-12 shows the average and median withdrawal amount for owners who took only SWP withdrawals in 2014 for both qualified and nonqualified contracts. 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.

The median withdrawal amount in a SWP was **\$5,511** vs. **\$7,003** when taken on a non-systematic basis.

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	\$11,286	\$11,928	\$7,939	\$6,535
Age 60–69	\$9,397	\$8,709	\$6,600	\$5,557
Age 70 or older	\$7,243	\$8,179	\$4,934	\$5,465
Total	\$8,079	\$8,384	\$5,520	\$5,500

Note: Based on 456,603 contracts issued before 2014 and still in force at EOY 2014, taking only systematic withdrawals in 2014.

For those contracts with only occasional or non-systematic withdrawals, the median amount in 2014 was \$7,003 and the average was \$15,756. For owners under age 60 who took only occasional withdrawals, the withdrawal amounts were 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	\$24,187	\$35,092	\$12,791	\$13,000
Age 60–69	\$19,025	\$21,384	\$9,897	\$8,900
Age 70 or older	\$9,379	\$17,095	\$5,057	\$7,300
Total	\$14,311	\$21,004	\$6,755	\$8,330

Note: Based on 141,810 contracts issued before 2014 and still in force at EOY 2014, taking only non-systematic or occasional withdrawals in 2014.

A small percentage of owners took both SWPs and occasional withdrawals. For these owners, the median withdrawal amount was \$11,300 for IRAs and \$12,000 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 Percentage of Total Withdrawal Amount

Age	Only Occasional Withdrawals		Only Systematic Withdrawals		Both Systematic and Occasional Withdrawals		Total
	IRA	Nonqualified	IRA	Nonqualified	IRA	Nonqualified	
Under age 60	5%	2%	1%	0%	0%	0%	8%
Age 60–69	11%	4%	17%	6%	3%	1%	41%
Age 70 or older	9%	4%	22%	11%	3%	1%	51%
Total	24%	10%	40%	17%	7%	3%	100%

Note: Based on 28,363 GLWB contracts issued before 2014 and remained in force at EOY 2014 with withdrawals in 2014. Values may not sum to 100 percent due to rounding.

First Withdrawals Through SWPs for IRA Contracts Issued in 2007

Initiating an SWP may indicate an owner's desire to utilize the lifetime guaranteed withdrawal rider in the contract. It will benefit companies active in this market to examine when owners initiate SWPs for their first withdrawal, and how many continue to use SWPs. Reviewing trends in SWP behavior will allow companies to better frame and focus on the withdrawal risk and gauge owner inclination to utilize the rider at different age bands depending upon the qualified or non-qualified sources of funding.

We have constructed a step-chart based on historical SWP withdrawal behaviors in order to get a clear picture of three important considerations regarding SWP behaviors: first, at what age are owners likely to first initiate an SWP withdrawal; second, how many rely on their SWP withdrawals in all following years once they have initiated SWPs; and third, how many owners initiate their first withdrawals through an SWP during the contract duration or holding period. As we saw in previous analyses, we need to examine the SWP withdrawal behaviors by source of funds — qualified and non-qualified dollars separately. Table 1-15 provides SWP behavior for 2007 IRA buyers aged 57 to 75 during 2007 to 2014 (8 years of SWP withdrawal history). The percentage of owners in this table represents only owners who initiated their withdrawals through an SWP and continued to take SWP withdrawals in all the following years once they started their withdrawals through SWPs.

Table 1-15: GLWB First SWP Withdrawals (and Continued Thereafter) for 2007 IRA Buyers

Withdrawals started at	Age at Purchase — IRA Annuity																				All Ages*	
	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	1%	1%																				
Age 59	2%	2%	4%																			
Age 60	4%	4%	3%	5%																		
Age 61	3%	3%	3%	3%	5%																	
Age 62	4%	4%	4%	4%	3%	8%																
Age 63	3%	4%	3%	4%	3%	5%	7%															
Age 64	3%	3%	3%	3%	4%	3%	4%	7%														
Age 65		6%	6%	7%	5%	7%	5%	5%	9%													
Age 66			5%	6%	6%	5%	7%	5%	6%	11%												
Age 67				4%	5%	6%	5%	6%	5%	5%	10%											
Age 68					4%	4%	5%	4%	6%	4%	4%	11%										
Age 69						4%	4%	5%	5%	6%	4%	5%	12%									
Age 70							13%	14%	14%	13%	15%	6%	14%	14%								
Age 71								12%	13%	13%	14%	19%	6%	19%	16%							
Age 72									5%	6%	6%	7%	14%	4%	15%	17%						
Age 73										3%	3%	5%	5%	8%	3%	15%	17%					
Age 74											3%	4%	4%	4%	9%	3%	17%	19%				
Age 75												3%	3%	3%	4%	9%	4%	14%	16%			
Age 76													3%	3%	4%	4%	9%	4%	17%			
Age 77														2%	3%	3%	4%	9%	4%			
Age 78															3%	3%	4%	4%	8%			
Age 79																2%	3%	3%	4%			
Age 80																	3%	3%	3%			
Age 81																		3%	4%			
Age 82																				3%		
Cumulative	21%	26%	31%	36%	36%	42%	50%	60%	62%	62%	61%	61%	62%	60%	56%	56%	59%	57%	60%			
																						36%

Note: Based on a constant group of 74,482 IRA contracts issued in 2007 and still in force at EOY 2014.

*All ages analysis includes all ages reported, including ages not shown in the chart.

The above table expands on the overall withdrawal activity illustrated in Table 1-8. Some issues worth noting:

- Older owners, particularly owners aged 65 or over, are more likely to take advantage of SWPs for their first withdrawals from their annuities when they initiate the withdrawals and to continue their withdrawals through SWPs. The percentage of owners taking SWPs goes up with each age increment.
- On average, 6 percent of all owners initiated withdrawals in their first year of ownership (2007) through SWPs, and continued in all the following 7 years.
- In their second year of ownership (2008), another 5 percent of owners started withdrawals using SWPs. In all of the following years, the percent of owners initiating withdrawals through SWPs remains stable (4 to 5 percent) except in 2009 when RMDs were waived.
- There is a notable increase in the percentage of owners using SWPs for their first withdrawals around age 60 and 65, which is typically the starting age for age bands that allow higher guaranteed payout rates.
- Overall, 36 percent of 2007 owners have initiated withdrawals in the last 8 years through an SWP program and continued to take withdrawals in all the following years. This trend allows the company to estimate withdrawal activities of SWP users who are considered core users of GLWB riders.

First Withdrawal Through SWPs for Nonqualified Contracts Issued in 2007

For nonqualified annuity owners aged 57 to 69, a similar first-year withdrawal pattern exists for SWPs (Table 1-16). However, there is no spike in withdrawals for ages 70 or 71.

Table 1-16: GLWB First Withdrawals (and Continued Thereafter) for 2007 Nonqualified Buyers

Withdrawals started at	Age at Purchase – Nonqualified Annuity																			All Ages*			
	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	0%	1%																					
Age 59	1%	1%	2%																				
Age 60	3%	3%	2%	3%																			
Age 61	3%	2%	2%	2%	4%																		
Age 62	4%	3%	3%	3%	3%	4%																	
Age 63	3%	4%	3%	3%	3%	3%	5%																
Age 64	3%	2%	3%	3%	2%	3%	5%																
Age 65		5%	5%	6%	5%	6%	4%	4%	7%														
Age 66			4%	5%	6%	5%	5%	4%	4%	9%													
Age 67				4%	4%	5%	5%	5%	3%	4%	8%												
Age 68					3%	4%	4%	5%	4%	3%	5%	8%											
Age 69						3%	3%	4%	5%	4%	3%	4%	11%										
Age 70							4%	4%	4%	5%	4%	4%	4%	11%									
Age 71								3%	4%	4%	4%	4%	4%	5%	10%								
Age 72									3%	4%	4%	4%	5%	4%	4%	10%							
Age 73										2%	3%	3%	4%	5%	4%	4%	10%						
Age 74											3%	3%	4%	4%	4%	3%	5%	11%					
Age 75												3%	3%	4%	3%	6%	3%	4%	10%				
Age 76													2%	3%	4%	6%	6%	3%	5%	11%			
Age 77														3%	4%	3%	4%	7%	4%				
Age 78															3%	3%	3%	3%	4%				
Age 79																2%	3%	3%	4%				
Age 80																	2%	3%	3%				
Age 81																		3%	3%				
Age 82																				3%			
Cumulative	18%	20%	25%	29%	31%	33%	34%	34%	34%	35%	35%	35%	38%	39%	35%	37%	36%	38%	37%				
																							27%

Note: Based on a constant group of 44,559 nonqualified contracts issued in 2007 and still in force at EOY 2014.
 *All ages analysis includes all ages reported, including ages not shown in the chart.

In the first year, approximately 3 to 11 percent of owners aged 60 and older took their first withdrawals through SWPs. The percent of non-qualified owners taking first withdrawals through SWPs are not influenced at age 70 or 71 by RMD-related issues. The percent of owners taking

withdrawals in the very first year of ownership is higher than in subsequent years for owners aged 65 or above and 2009 was not an anomaly for nonqualified owners.

Overall, 27 percent of nonqualified 2007 owners initiated their first withdrawals through an SWP and continued to use SWPs in all the following years once they started their withdrawals.

We also analyzed first withdrawals through SWPs for IRA and nonqualified contracts issued in 2008 and found that data followed a very similar pattern as that observed with the 2007 data.

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 in a contract year, they have taken an excess withdrawal. Excess withdrawals trigger an adjustment of the benefit's guaranteed amount, which reduces the benefit base.

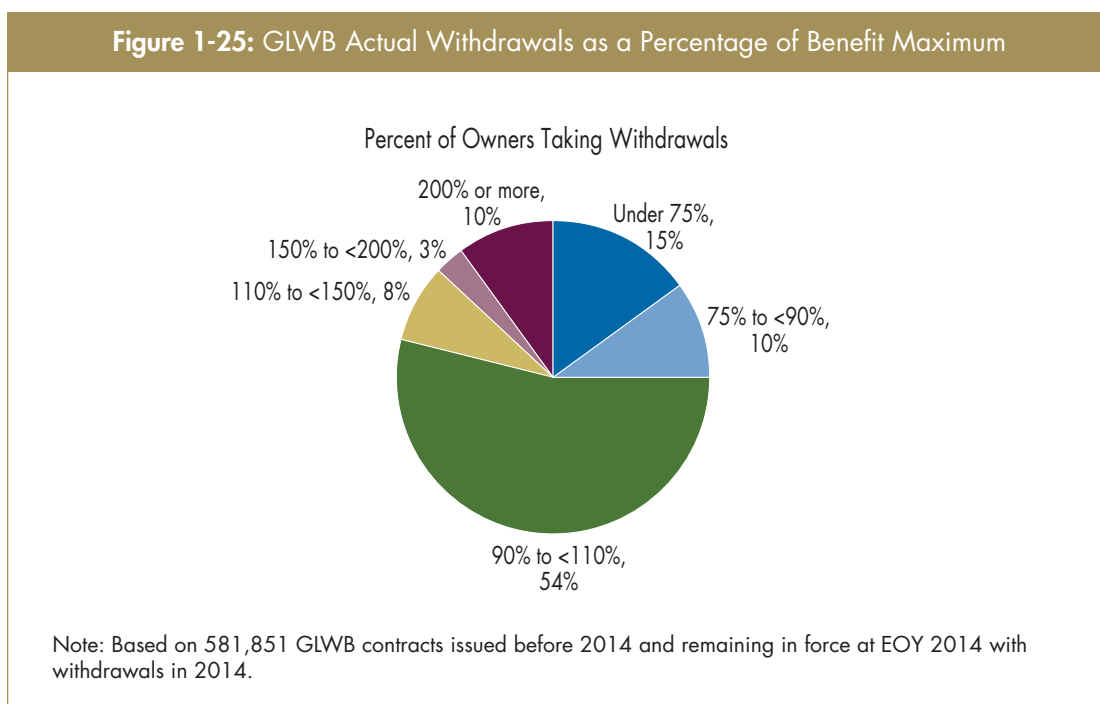
We asked participating companies to provide this allowed maximum amount as of BOY 2014. If companies did not provide the maximum withdrawal amount but provided the benefit base as well as the maximum percentage of this base that could be withdrawn each year, then we calculated an estimate of the percent 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).

For percentage of benefit maximum withdrawn, we looked at the relationship of customers' actual withdrawal amounts in calendar-year 2014 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.

- 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).

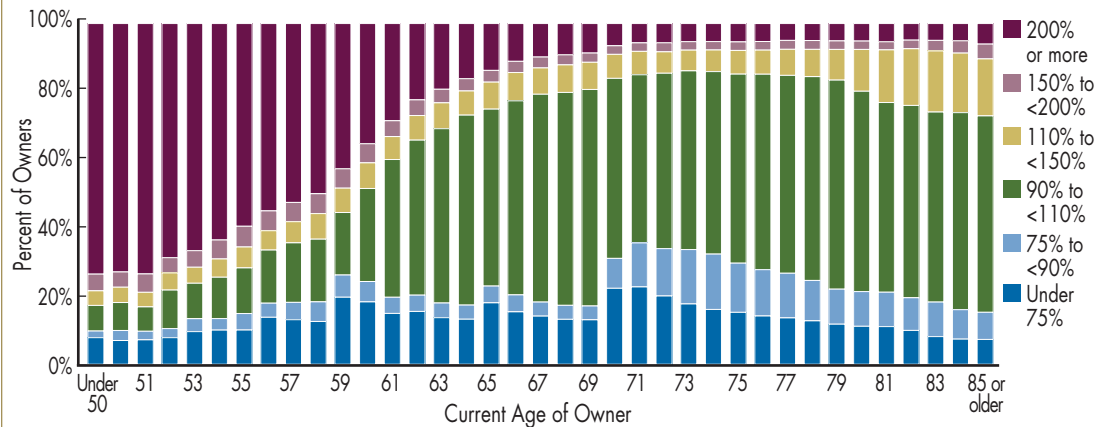
Figure 1-25 shows the degree to which withdrawals were higher or lower than maximum withdrawal amounts allowed in the contract.



Overall, 79 percent of owners who took withdrawals in 2014 withdrew income that was below or close to the maximum amount calculated — under 110 percent of annual benefit maximum. Eight percent of owners withdrew 110 to less than 150 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, 13 percent of the owners took withdrawals that exceeded the maximum withdrawal amount by 50 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 150 percent or more of the maximum amount allowed (top two bars of Figure 1-26).

Figure 1-26: GLWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age



Note: Based on 581,661 GLWB contracts issued before 2014, still in force at EOY 2014, and with withdrawals in 2014.

There are some salient insights from the above chart:

- The majority of owners taking withdrawals, as we have seen in previous sections, are typically aged 65 or older. There are very few instances where these older owners take more than the annual benefit maximum.
- Younger owners, particularly under age 60, are more likely to take 200 percent or more of the benefit maximum allowed in the contract.
- There is a noticeable increase at ages 70 and 71 in the percentage of owners taking withdrawals of less than 90 percent of the benefit maximum. This can be explained by the need for IRA owners to take RMDs, which are typically at a lower withdrawal rate. In Appendix C — Figure C1-1, you can see that some owners at age 70 and 71 are taking RMD withdrawals, as a necessity and expediency — at a lower rate based on life expectancy — rather than as a measure of maximizing their withdrawal benefits.
- On the other hand, some IRA owners aged 75 or older are taking withdrawals in the range of 110 to 149 percent of the maximum benefit rate allowed in the contracts (see Appendix C — Figure C1-1). They are apparently using higher RMD withdrawal rates applicable in these older ages, often without jeopardizing their benefit bases in the contract, as most insurance companies allow IRA owners to adhere to the RMD rules.

Only **1 in 9** owners aged 60 or over took withdrawals of 150 percent or more of the maximum amount allowed; some possibly due to RMDs.

Seventy-two percent of owners who took withdrawals in 2014 took within 75 to 150 percent of the benefit maximum allowed in their contracts (Table 1-17). Fifteen percent and 10 percent of owner withdrawals were either below 75 percent or exceeded 200 percent or more of the benefit maximum allowed in the contracts respectively. Only 3 percent of owner withdrawals fell within 150 to less than 200 percent of the maximum withdrawals allowed.

Table 1-17: Percentage of GLWB Owners Taking Withdrawals as Percent of Benefit Maximum

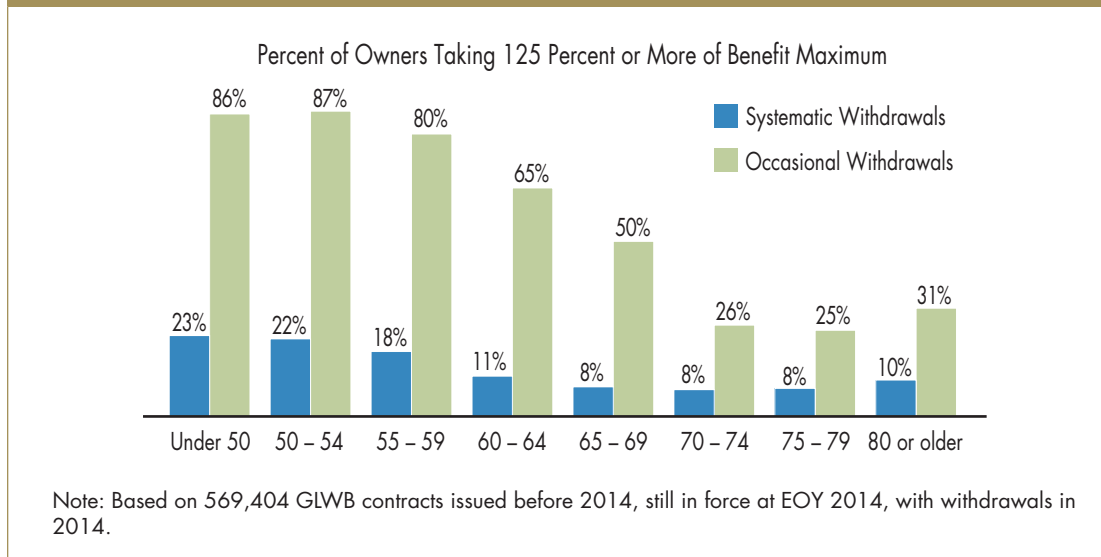
Age	Withdrawal Amount as Percent of Benefit Maximum Allowed in the Contract					
	Under 75%	75% to <90%	90% to <110%	110% to <150%	150% to <200%	200% or more
Under 50	8%	2%	8%	4%	5%	74%
50 to 54	9%	3%	10%	5%	5%	68%
55 to 59	15%	6%	17%	7%	6%	50%
60 to 64	15%	5%	47%	7%	4%	22%
65 to 69	15%	4%	60%	8%	3%	10%
70 to 74	20%	13%	52%	7%	3%	6%
75 to 79	14%	13%	58%	8%	3%	5%
80 to 84	10%	10%	57%	16%	3%	5%
85 or older	7%	8%	58%	17%	4%	6%
All ages	15%	10%	54%	8%	3%	10%

Note: Based on 581,661 GLWB contracts issued before 2014 with withdrawals in 2014.

Six in 10 owners under age 60 and taking withdrawals exceeded 150 percent or more of the benefit maximum; with most of them taking 200 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 12 percent of owners aged 60 or over and taking withdrawals exceeded 150 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.

The method used for withdrawal — systematic or occasional — is a strong indicator of whether owners are likely to exceed the benefit maximum. Most withdrawals that exceed 125 percent of the annual benefit maximum amount are occasional (Figure 1-27).

Figure 1-27: GLWB Withdrawals to Annual Benefit Maximum Amount by Age



Fifty-nine percent of excess withdrawals (125 percent or more of the benefit maximum) came from occasional withdrawals. Forty-three percent of all occasional withdrawals exceeded 125 percent or more of the annual benefit maximum allowed in the contract. On the other hand, only 9 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 withdrawals between 110 percent to less than 125 percent of benefit maximum account for only another 4 percent of SWP users. Over 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.

In terms of taking excess withdrawals, there is no difference between male and female contract owners, or between IRA and nonqualified owners.

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 1-28, 1-29, and 1-30 illustrate the proportion of owners taking withdrawals by age and contract size.

Owners under age 60 with contract sizes under \$100,000 at BOY 2014 were not as likely to take withdrawals that were less than 90 percent of the maximum annual amount. For example, 3 percent of owners aged 55–59 with contract sizes under \$100,000 who took withdrawals, took between 75 and less than 90 percent of their maximum allowed amount, compared with 7 percent and 9 percent for those with contract values of \$100,00–\$250,000 and \$250,000 or more, respectively.

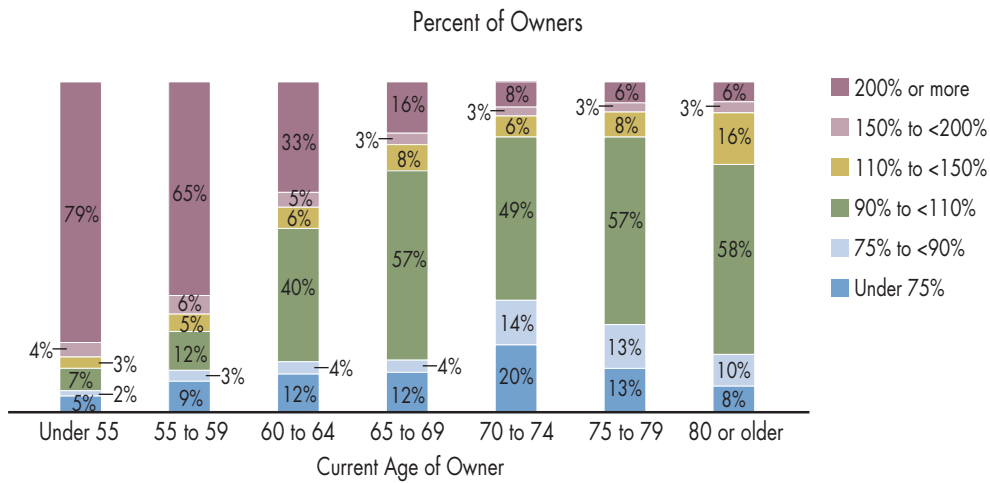
Owners of VAs with higher contract values — especially younger owners — are less likely than those with lower contract values to significantly exceed the benefit maximum.

However, we see the opposite for those taking withdrawals of 200 percent or more. Two thirds of owners aged 55–59 with contract sizes below \$100,000 took withdrawals of 200 percent or more of their maximum amount, compared with 43 percent and 24 percent of owners aged 55–59 with contract values of \$100,000 – \$249,999 and \$250,000 or more, respectively.

As noted earlier, the relationship between efficiency and contract size is limited to 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

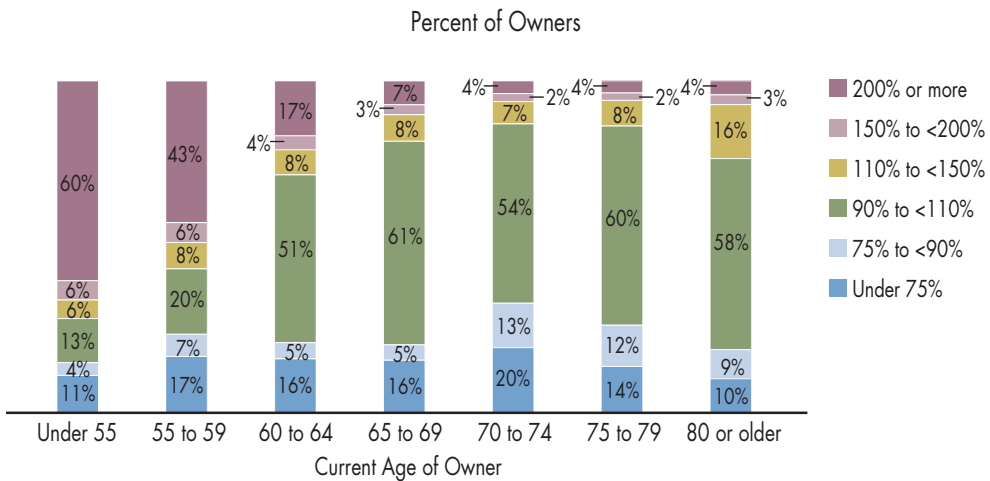
rather the proportion of owners with contract sizes below \$100,000 taking amounts well above the benefit maximum. In short, owners of VAs with higher contract values, especially younger owners, are less likely than those with lower contract values to significantly exceed the benefit maximum.

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



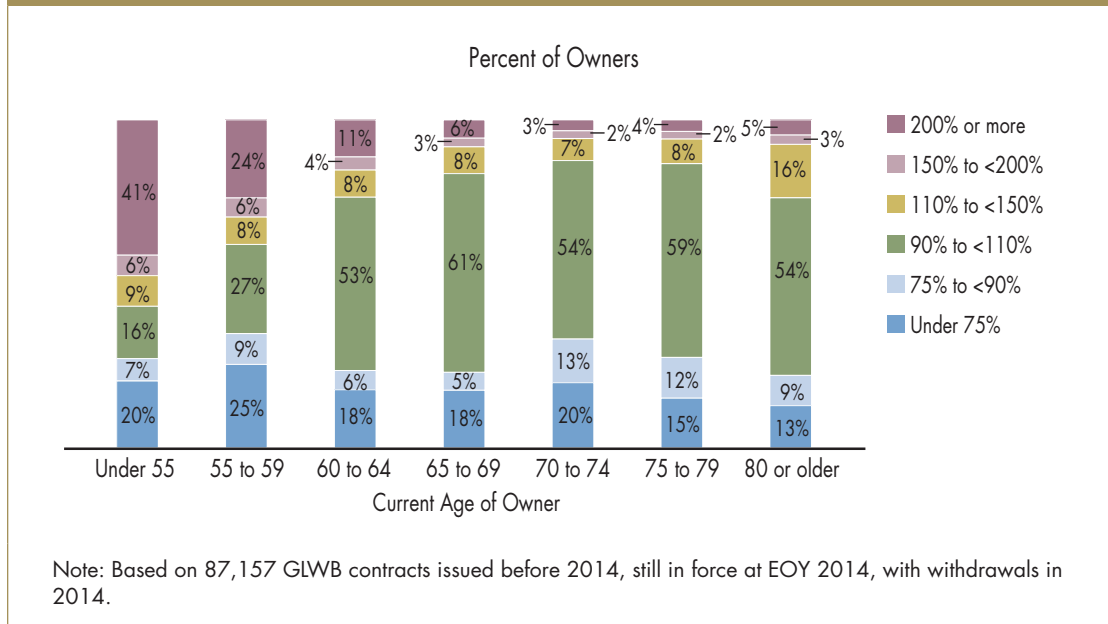
Note: Based on 287,803 GLWB contracts issued before 2014, still in force at EOY 2014 with withdrawals in 2014.

Figure 1-29: GLWB Withdrawals to Benefit Maximum Amount by Age, Contract Sizes \$100,000 to \$249,999



Note: Based on 206,701 GLWB contracts issued before 2014, still in force at EOY 2014 with withdrawals in 2014.

Figure 1-30: 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. In some cases, immediate utilization of the GLWB is appropriate for certain customers’ retirement income needs, but there are also circumstances in which delaying withdrawals makes sense. By comparing their own withdrawal activity by contract duration to that of the industry, companies can assess the extent to which their customers’ usage patterns match both their own expectations and the experience of other VA companies. The comparison will also facilitate internal forecasts by estimating when and how many of the GLWB customers will likely take withdrawals, and the resulting cash flow needed for the book of business.

Owners who bought their GLWB annuity in Q4 2014 had only 3 months, maximum, to set up withdrawals and receive payments. Only 6 percent of these owners took withdrawals from their annuities (Figure 1-31). As the contract duration increases, withdrawal activity increases, reaching 16 percent among customers who owned the contract for one full year (as of EOY 2013). The overall utilization rate on a full-year basis rises to 17 percent for 2-year-old contracts, 18 percent for 3-year-old contracts, and over 22 percent for contracts that are 5 years old and older (Table 1-18).

Figure 1-31: GLWB Overall Utilization Rates by Contract Duration

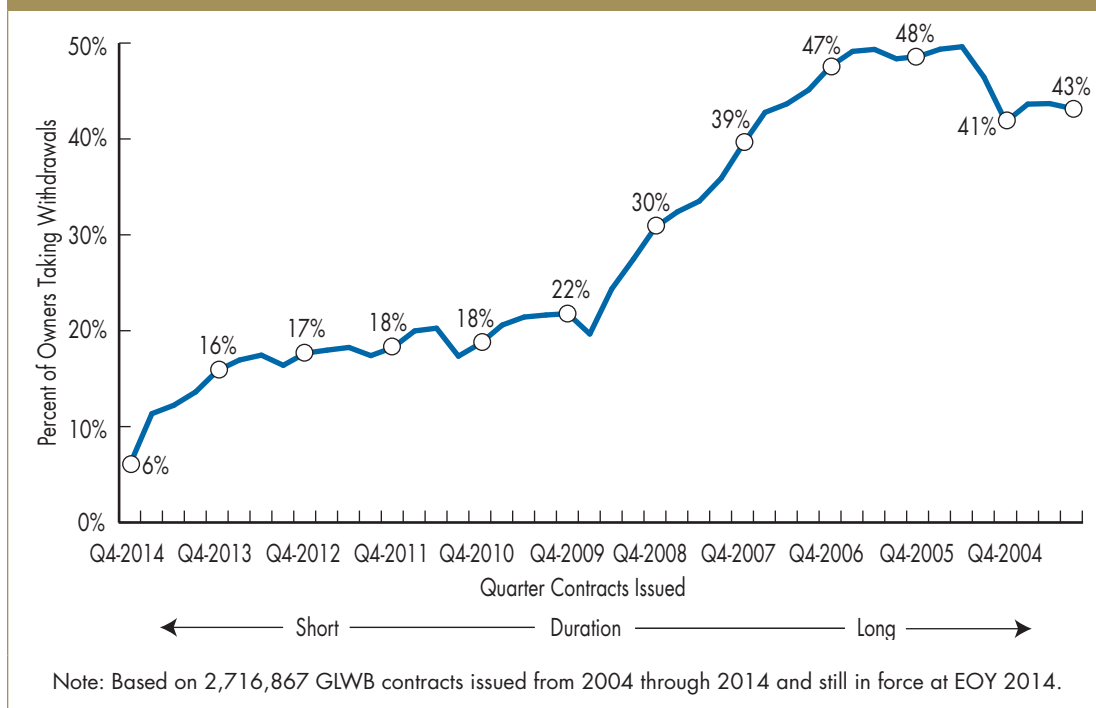
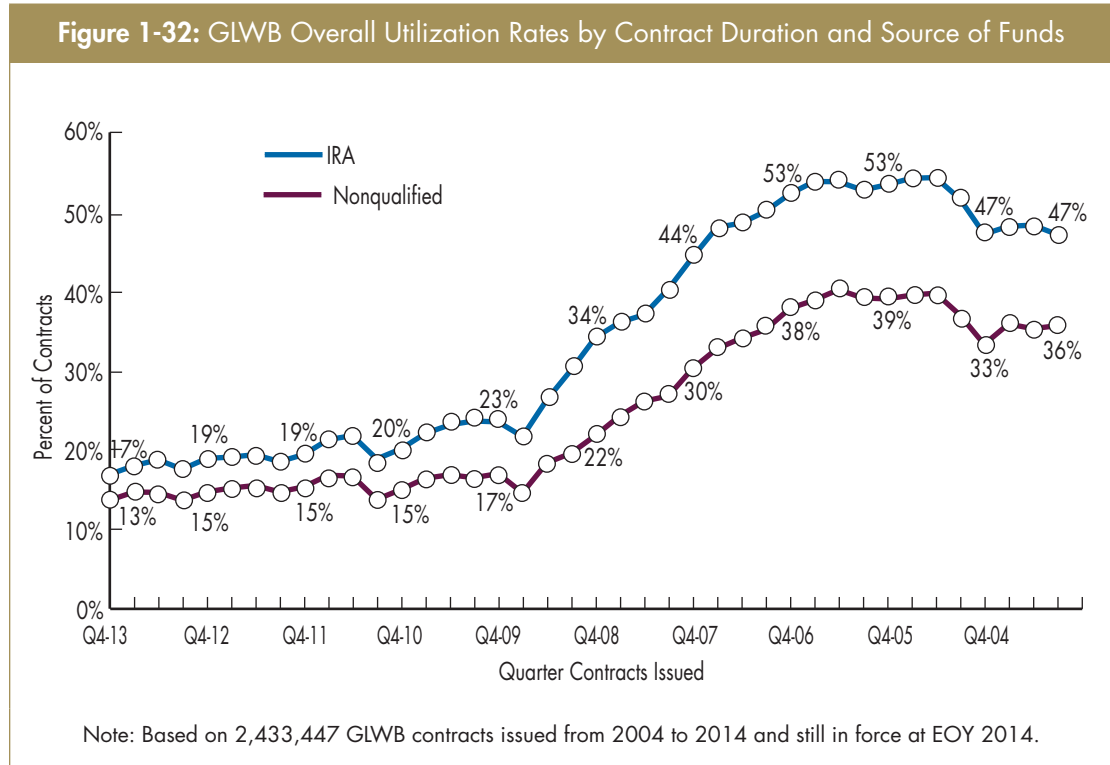


Table 1-18: GLWB Overall Percentage of Contracts Taking Withdrawals by Year of Issue

Year of Issue	Overall Percent of Contracts With Withdrawals in 2014
2004	42.6%
2005	48.3%
2006	48.1%
2007	42.0%
2008	32.8%
2009	22.7%
2010	20.2%
2011	18.6%
2012	17.6%
2013	16.4%
2014	10.6%

Note: Based on 2,716,867 GLWB contracts issued in 2004 through 2014 and remaining in force at EOY 2014.

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 1-32).

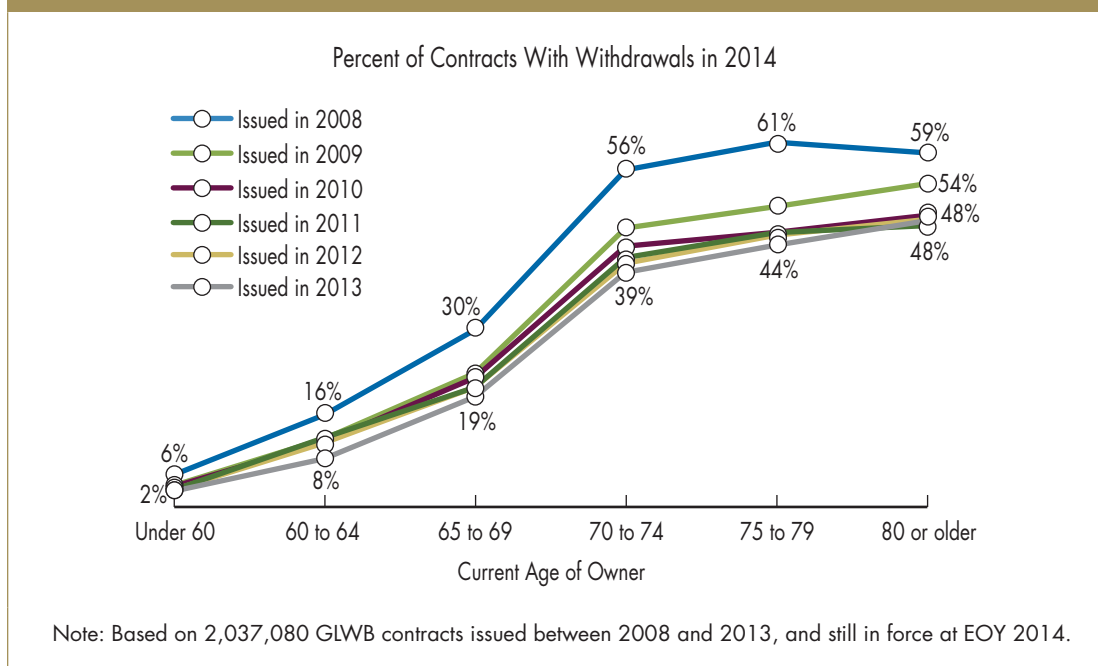


The increase in the percent of customers taking withdrawals is similar to the rates displayed in Figure 1-31. In general, around 15 percent of customers take withdrawals in their first year of ownership. It slowly increases in years 2-4 to around 20 percent. After that, the rate of owners commencing their withdrawals grows incrementally at 5 to 10 percent points 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 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 1-33). 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 1-33: 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 2013 that were in force for at least a year, the overall withdrawal rate among owners between ages 65 and 69 was 19 percent. However, for contracts issued in 2008 and owned for at least six years, the overall withdrawal rate among owners between ages 65 and 69 rose to 30 percent.

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 improve understanding of a company’s GLWB customer withdrawal behavior.

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

As illustrated in Figure 1-33, controlling for age, utilization among contracts issued in 2008 is significantly higher than contracts issued after 2008. In order to understand why there was such a clear difference, we examined several factors:

- **Mix of qualified and nonqualified contracts.** If 2008 had a higher proportion of IRA contracts than other issue years, then higher withdrawal rates for owners age 70 or older would be expected due to RMDs. However, there was no significant difference in the proportion of IRA contracts across issue year; moreover, even if there were a difference, it would not explain the higher withdrawal rates among owners under age 70.
- **Maximum annual withdrawal percentages.** After the market crash of 2008, many companies attempted to de-risk their GLWBs by changing the terms of the riders, which could have included reductions to the maximum annual withdrawal percentages. With less-generous benefits, owners of more recently-issued contracts may have been less inclined to take withdrawals. But an examination of average and median maximum annual withdrawal percentages showed no difference across issue year.
- **Benefit base roll-up rates.** Another de-risking method that could have been employed by companies after 2008 was reducing the benefit base roll-up rates among GLWBs with pre-withdrawal roll-up features. High roll-up rates can influence withdrawal behavior in two ways: First, they serve as a *disincentive* to initiate withdrawals because longer delays produce higher benefit bases and, in turn, higher maximum annual withdrawal amounts. Second, they serve as an *incentive* to initiate withdrawals because, all else being equal, there would be greater opportunity cost if an owner did not eventually activate a GLWB with a high benefit base versus a GLWB with a lower benefit base. Comparing the roll-up rates among the contracts issued in 2008 to the roll-up rates of contracts issued after 2008 revealed no significant differences.
- **In-the-Money (Benefit Base-to-Contract Value Ratio).** Contracts issued in 2008, especially those issued in the first half of the year, were likely to have GLWBs that were in-the-money in 2014. In theory, benefits that are in-the-money should be utilized at higher rates than benefits not in-the-money. But as discussed elsewhere in this report, our analyses have shown repeatedly that when controlling for other factors, there appears to be little or no owner sensitivity to in-the-moneyness in terms of their withdrawal activity.

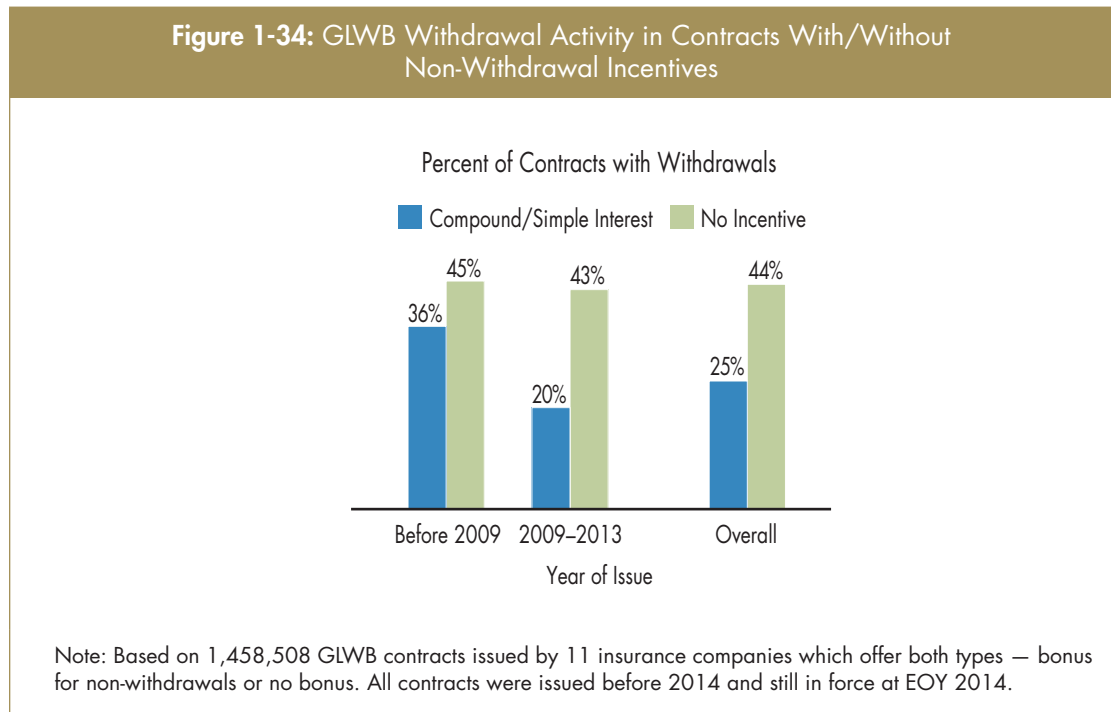
- **Survival bias.** Perhaps the best explanation for the duration effect may simply be that older contracts have provided owners with a longer time period in which to initiate withdrawals. As discussed earlier in this section, once owners have begun withdrawals, most owners (especially those ages 60 older) do not stop. There may also be a related survival effect, where the pool of contracts becomes increasingly biased toward owners who want to use their contracts for income – those who do not want to use their GLWBs may surrender their VA contracts while those who are using them will generally not want to surrender their contracts. This survival effect should be especially pronounced among contracts that exited the surrender penalty period in a prior year, as is the case for 38 percent of the 2008 issues but only 9 percent of contracts issue in 2009 or later.

Withdrawals in Contracts With Non-Withdrawal Incentives

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

For example, a roll-up of 7 percent per year, growing on a simple basis, may ensure that a 55-year-old customer investing \$100,000 in 2014 would have a guaranteed benefit base of \$170,000 in 2024, 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 \$ 8,500. Under GLWBs, the benefit base amounts are always protected from market declines.

When we examined more than 1,458,000 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 has incentives for non-withdrawals (Figure 1-34). Even among longer-duration contracts, a larger percent of owners take withdrawals when no incentive is present. Among contracts with no incentives, the percent of owners taking withdrawals in 2014 was 44 percent.



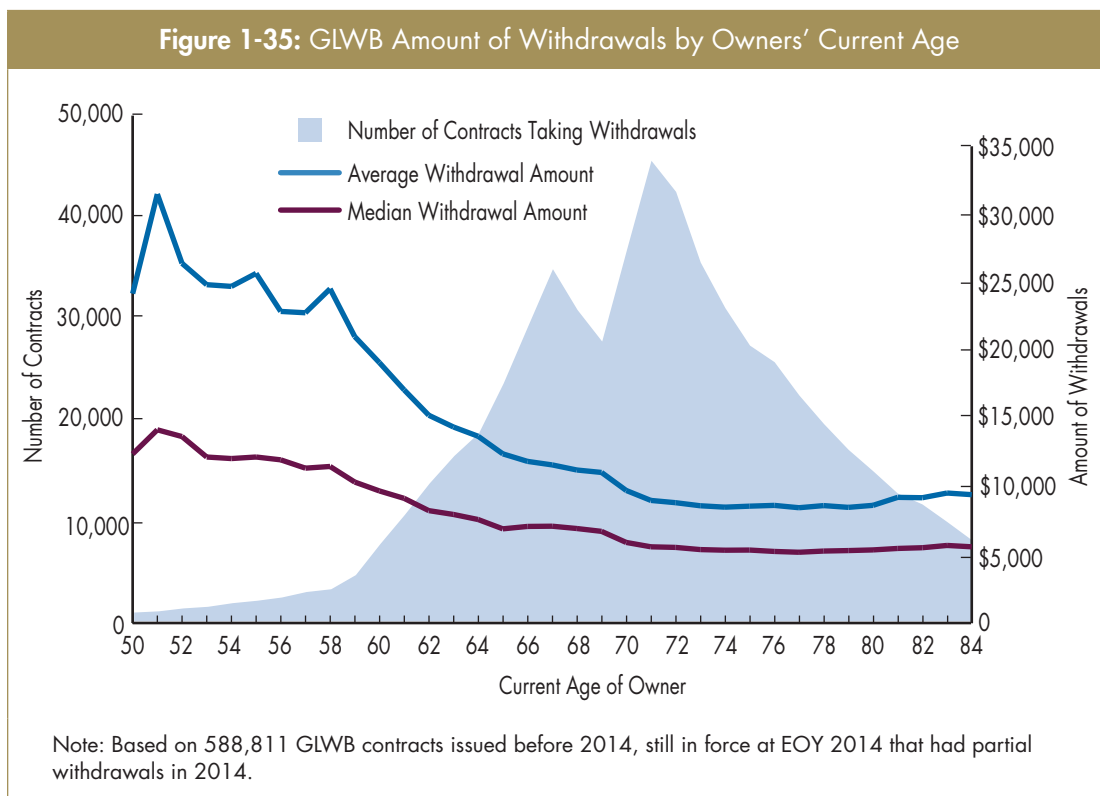
25% of owners took withdrawals when deferral incentives were available — much lower than the **44%** of owners who took withdrawals when no incentives were available.

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.

Average Withdrawal Amounts

The median withdrawal amount was \$6,000 in 2014 for contracts issued before 2014 that were in force at EOY 2014.

Owners aged 60 and under took median withdrawals ranging from \$9,500 to \$14,000 while the average withdrawals ranged from \$18,900 to \$31,300 (Figure 1-35). However, these owners constituted only 5 percent of all contracts with withdrawals in 2014. Given the high average withdrawal amounts, it is likely that these contracts were partially surrendered.

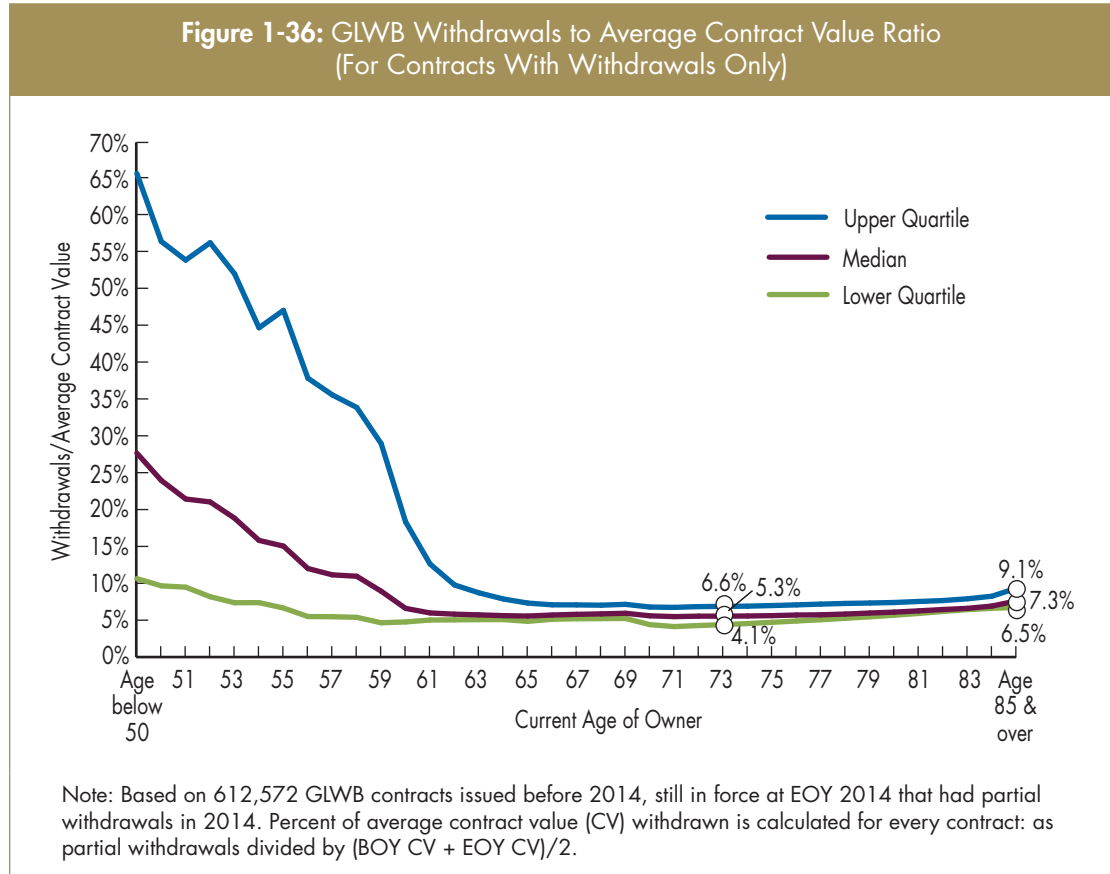


However, an increasing number of owners over age 60 took withdrawals in more sustainable withdrawal patterns and amounts. The median withdrawal amount at various ages ranges from \$5,000 to \$9,000 and the average withdrawal amount ranges from \$8,300 to \$16,900 per contract. As owners start to retire, 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.

Median withdrawal amount for contracts with withdrawals in 2014 = \$6,000.

Withdrawals as a Percentage of Contract Value and Benefit Base

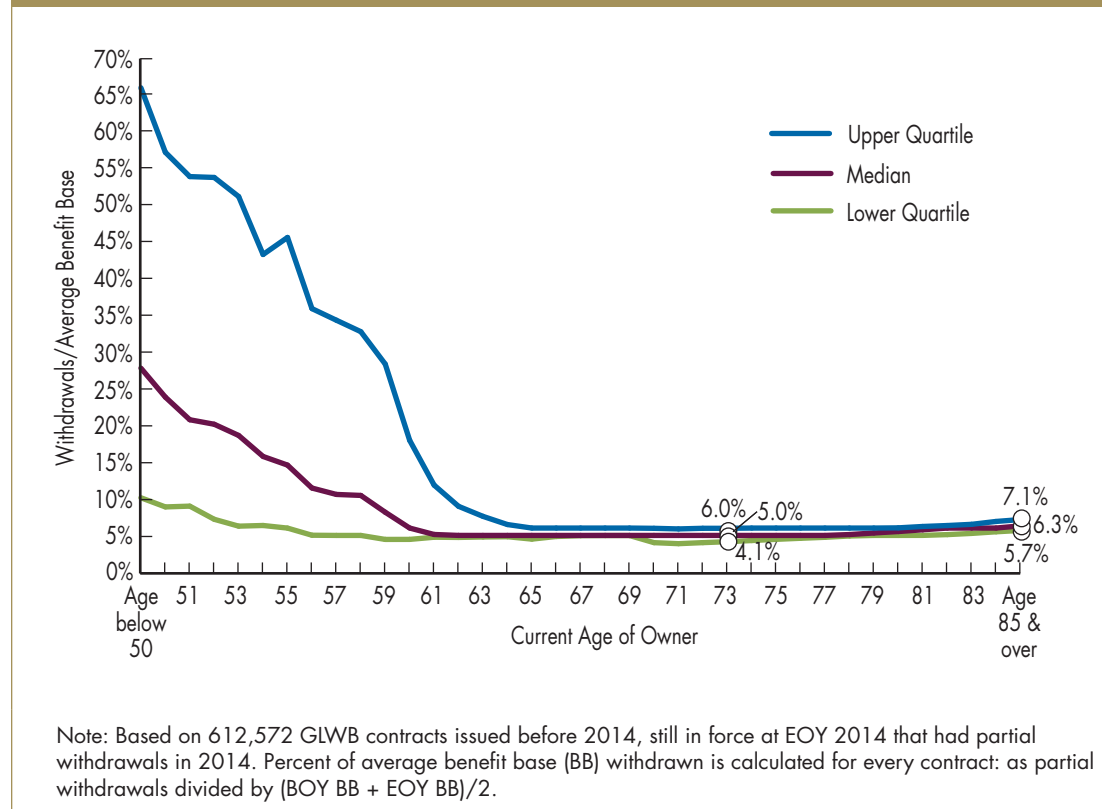
In order to provide some context, we assessed the withdrawal amount in relation to both contract value and the benefit base. Figure 1-36 shows the median withdrawal amount for all ages and also the quartile distribution of the withdrawal amounts in 2014.



The distribution of the withdrawals as a percent of average contract value withdrawn shows that, for owners aged 65 or over, the median, the upper quartile, and the lower quartile values are almost identical. The pattern also indicates that the majority of older owners taking withdrawals do so at similar ratios from their contract values; for example, for owners at age 73 around 5.3 percent. For owners under age 60 the median of the ratios ranges between 9 to 27 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 median of the contract value ratios begins to increase for owners over age 75 due to age banded benefits.

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 1-37). 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 owners ages 65–75 taking withdrawals do so at a rate of around 5 percent of their benefit base values — a typical GLWB maximum payout rate for this age. The median of the benefit base ratios begins to increase for owners over age 75 due to age banded benefits.

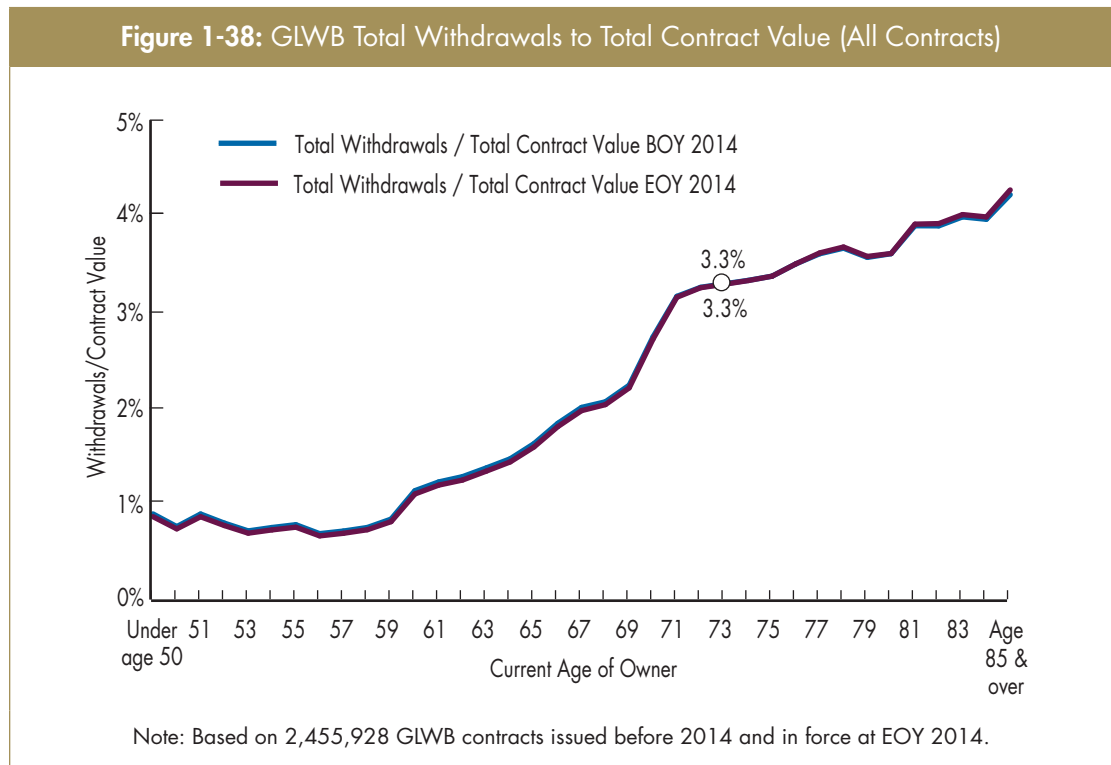
Figure 1-37: GLWB Withdrawals to Average Benefit Base Ratio
(For Contracts With Withdrawals Only)



Total Withdrawal Amount vs. Total Contract Value

By comparing the ratio of total withdrawal amount to contract values at BOY and the ratio of total withdrawal amount to EOY contract values, we can ascertain another measure of GLWB risk originating in customer behavior. We calculate this measure at two levels. First, total withdrawals during 2014 can be divided by total contract values at BOY and EOY, for all contracts in force. Second, the same ratio can be computed for only the subset of contracts that experienced withdrawals in 2014. The first measure provides a view of risk from withdrawals in terms of the total book of business, while the second provides an estimation of risk from withdrawals among the contracts that are in withdrawal mode.

For all contracts in force in 2014, the ratio of total withdrawals to BOY contract values was 1.97 percent (in other words, the outflow from beginning assets was at a rate of 1.97 percent). However, the ratio declined slightly to 1.93 percent when we compare total withdrawals to total assets at EOY (Figure 1-38). When the ratio of total withdrawal amounts to contract values at EOY is lower than the ratio calculated at BOY, it means that the total contract values have increased due to investment gains despite reductions due to withdrawals. The lower ratio during the year reduces some of the risk exposure for the companies, in terms of withdrawal provisions in the GLWB rider.

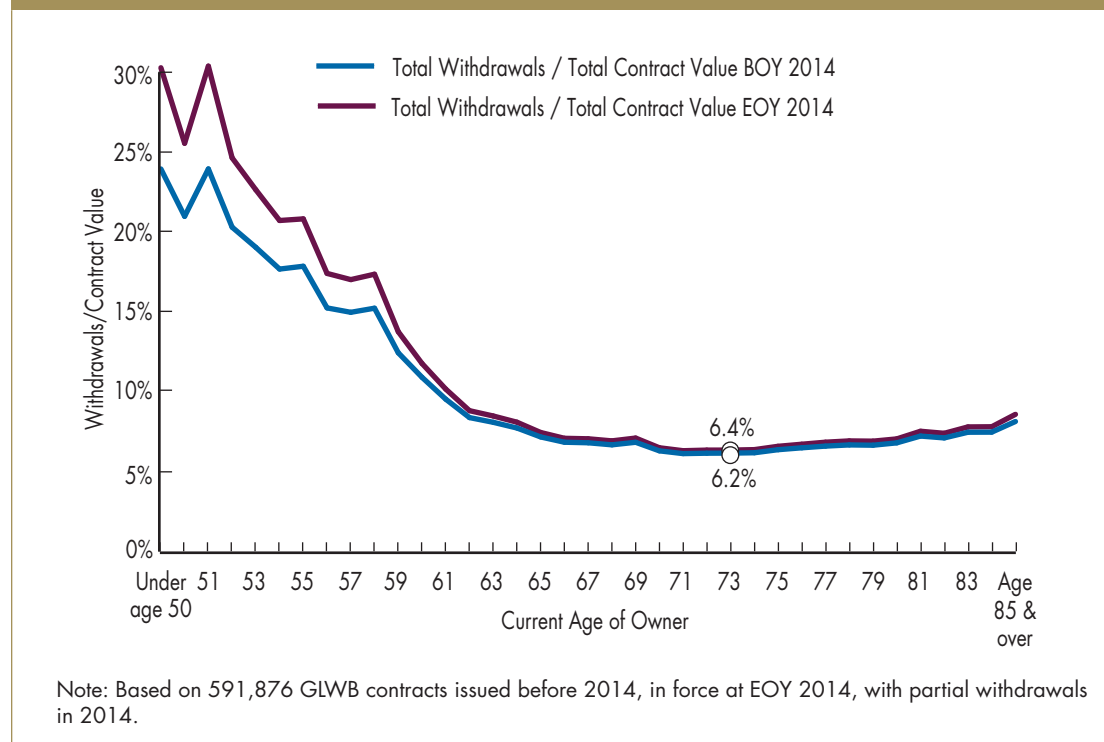


For example, customers aged 73 held \$8.98 billion in 65,623 contracts at BOY. The total withdrawal amount taken by these customers during 2014 was \$296.0 million, and the ratio of total withdrawals to contract values at BOY was 3.3 percent. However, during the year the contract values rose slightly to \$8.99 billion, after the withdrawals that had occurred. Due to the minimal rise in contract value, the ratio of withdrawal amounts to contract values for 73-year-old owners thereby remained a consistent 3.3 percent at BOY and EOY.

Despite positive equity markets, the limited growth of contract values kept the ratio of total withdrawals to total contract values almost identical during 2014.

Insurance companies can also examine the risks associated with the subset of contracts with withdrawals in 2014. The limited investment performance seen in 2014 was not enough to offset the withdrawal amounts, and the ratio of withdrawals to contract values increased for all ages. (Figure 1-39). For example, among owners aged 73 who made withdrawals in 2014, the ratio went from 6.2 percent of the contract value at BOY to 6.4 percent at EOY. For all the contracts that had withdrawals in 2014, there was a decrease of 4.0 percent in the aggregate contract values after withdrawals.

Figure 1-39: GLWB Total Withdrawals to Total Contract Value (For Contracts With Withdrawals Only)



Withdrawal Activity in Single- and Joint-Lives Contracts

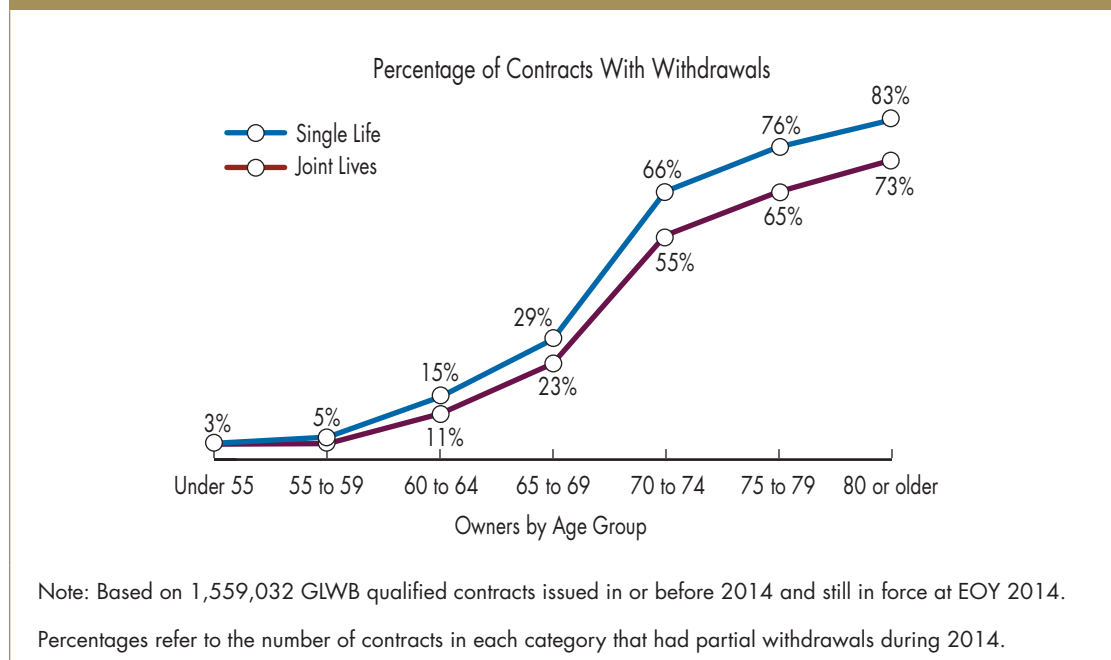
Some GLWB contracts offer guaranteed lifetime withdrawals on joint lives, allowing the withdrawals to continue as long as one of the annuitants is alive. Typically, the payout or guaranteed withdrawal rates for joint-lives contracts are lower than single-life contracts. Three in 10 GLWB contracts had payouts based on joint lives in 2014.

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

Overall, 24 percent of IRA owners take withdrawals from joint-lives contracts, slightly lower than the 29 percent of owners who take withdrawals from single-life contracts. This could be due to the fact that most joint-lives payouts are newer contract features, and that joint-lives payout rates are typically lower.

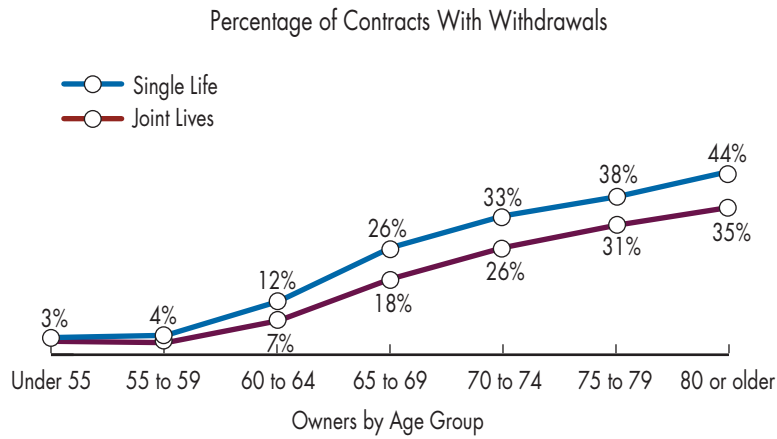
For GLWB contracts funded with qualified savings, issued before 2014 and still in force at EOY 2014, the percent of owners taking withdrawals was higher for single-life contracts even among owners aged 70 or older. (Figure 1-40).

Figure 1-40: GLWB Withdrawal Rates for Single- and Joint-Lives IRA Contracts



For all age groups, the percent of owners of nonqualified GLWBs taking withdrawals is lower in joint-lives contracts than in single-life contracts (Figure 1-41).

Figure 1-41: GLWB Withdrawal Rates for Single- and Joint-Lives Nonqualified Contracts



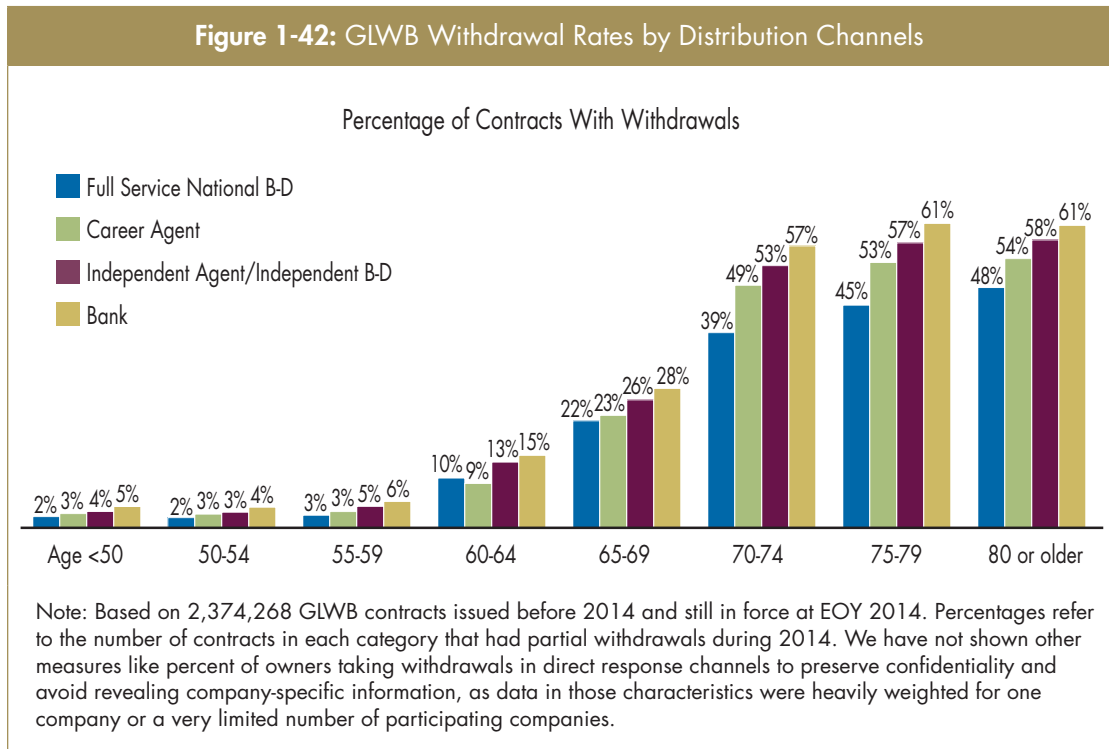
Note: Based on 754,966 GLWB nonqualified contracts issued in or before 2014 and still in force at EOY 2014. Percentages refer to the number of contracts in each category that had partial withdrawals during 2014.

Withdrawal Activity by Channel

The percent of GLWB owners aged 65 or over who took withdrawals in 2014 was highest in the bank channel.

If we look at distribution channels, we find that more bank GLWB owners took withdrawals in 2014 than in any other channel (Figure 1-42). Overall, 29 percent of bank channel owners took withdrawals, four percentage points higher than the independent B-D channel (25 percent). Twenty-two percent of owners in full-service national B-D and career agent channels took withdrawals.

Figure 1-42: 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; increasing at age 70 and over due to RMDs. Differences in withdrawal activity across channel can be partly explained by the different mix of qualified and non-qualified business — 18 percent of bank channel business were IRA contracts owned by individuals aged 70 or older (and therefore are likely to be taking RMDs) while 16 percent of contracts in the other distribution channels were IRA contracts owned by individuals age 70 or older.

In-the-Money Analyses

The equity market meltdown from 2008–2009 and the financial uncertainties of a weak economy that followed could have encouraged more GLWB owners to start lifetime withdrawals from their contracts. This incentive to exercise their option to receive guaranteed lifetime withdrawals from their contracts could have been compelling when a majority of GLWB contracts were in-the-money (benefit base greater than contract value at BOY).

From the perspective of in-the-money analysis the GLWBs are, in essence, owners' options to receive lifetime income. Naturally as the value of the contract declines with market losses, the value of the guarantee increases.

In order to understand the impact of contract in-the-moneyness on withdrawal activities, we need to give proper consideration to the severity and spread of in-the-moneyness among owners by age and by duration of contracts. We must also consider 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. *In order to conclude that contracts being in-the-money influence owner withdrawal activity, we would expect to see increased withdrawal activities irrespective of age.*¹¹

There are multiple ways to measure in-the-moneyness. One method is to compare the benefit base to the contract value. Another method is to calculate the actuarial present value of withdrawals of the in-force block of business. In this chapter, the latter method can be found in the "GLWB Actuarial Present Value of Future Payments" section.

Being in-the-money has not been a major driver of withdrawal behavior for GLWB contract owners.

¹¹ Additional analysis found no significant difference in the withdrawal pattern for contracts that were in-the-money compared to those not in-the-money when looking at withdrawal amounts that were above, at, or below the benefit maximum.

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

After the market crisis of 2008–2009, a majority of GLWB contracts were in-the-money for a number of years. Previous LIMRA studies¹² are helpful in understanding the context of the association between benefits being in-the-money and owner withdrawal activity (Table 1-19).

Calendar Year:	2009	2010	2011	2012	2013	2014
Percent of Contracts where Benefit Bases > Contract Values at BOY	93%	73%	62%	92%	79%	48%
Number of Contracts Issued before Calendar Year	.89 million	1.25 million	1.45 million	1.89 million	2.04 million	2.39 million

Examining the GLWB contracts issued before 2014, it is also evident that:

- Older duration contracts are more likely to be in-the-money (Figure 1-7). The older duration contracts are also more likely to have older owners than newer duration contracts.
- At the beginning of 2014, benefit bases in-the-money were not widely spread across all age groups due to improvement in contract values from positive market returns in 2012 and 2013 (Figure 1-12). In fact, contracts owned by investors aged 70 or older were more likely to be deeper in-the-money than younger owners. This is because a large number of older owners with older duration contracts initiated withdrawals in previous years and continued taking withdrawals from their contracts in all following years.
- Older owners — particularly those aged 70 or older — are more likely to take and continue withdrawals over a longer period of time. Since their withdrawal amounts typically remain within the maximum amount offered in the GLWB contracts, their contract values are likely to decline over a period (unless they experience large growth due to market growth) while their benefit bases are likely to remain level causing the in-the-money amount to grow as the withdrawals continue.

As a result, we expect that the percentages of owners taking withdrawals by the degree of in-the-moneyness will be skewed by current age and duration of contracts. We can also expect that the gap between the percentage of owners taking withdrawals in a particular year for contracts in-the-money vs. not-in-the money may grow in the future.

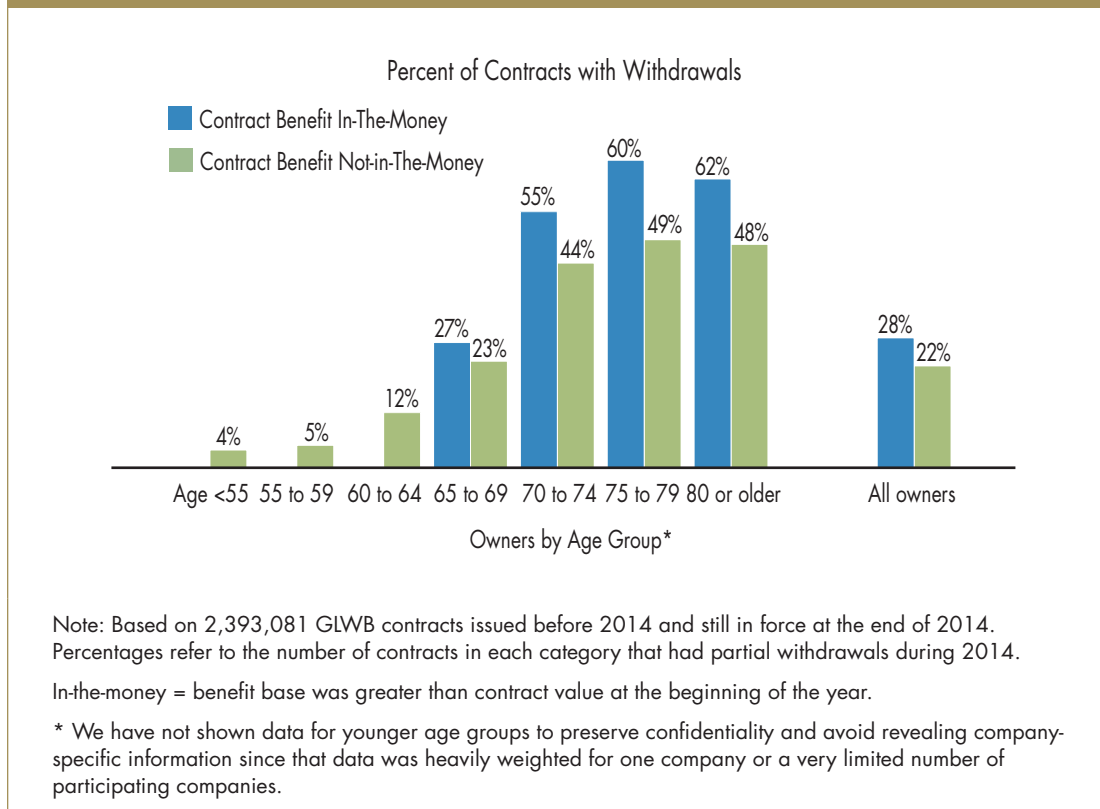
¹² *Guaranteed Living Benefits Utilization – 2009 Data*, LIMRA, 2011; *Guaranteed Living Benefits Utilization – 2010 Data*, LIMRA, 2012; *Variable Annuity Guaranteed Living Benefits Utilization — 2011 Experience*, LIMRA-SOA, 2013; *Variable Annuity Guaranteed Living Benefits Utilization — 2012 Experience*, LIMRA-SOA, 2014; *Variable Annuity Guaranteed Living Benefits Utilization — 2013 Experience*, LIMRA-SOA, 2015.

Our findings indicate that given the ups and downs in equity-market returns over the last few years, and increased market instability, almost 5 out of 10 contracts were in-the-money at the beginning of 2014 with 28 percent having withdrawals, compared with 22 percent of contracts that were not-in-the-money. Later in this section we will assess other factors that are key drivers of this withdrawal behavior.

The percent of owners aged 65 or older who took withdrawals in 2014 was higher among contracts in-the-money than for those not-in-the-money (Figure 1-43). This gap increases with age. For example, the percentage of owners aged 65 to 69 who took withdrawals in 2014 from in-the-money contracts was slightly higher at 27 percent compared with 23 percent among owners of contracts not-in-the-money. Sixty-two percent of owners aged 80 or older, with contracts in-the-money took withdrawals, compared with 48 percent of owners not-in-the money.

The overall utilization rate for contracts in-the-money at BOY was **28%**, compared with **22%** for contracts not-in-the-money.

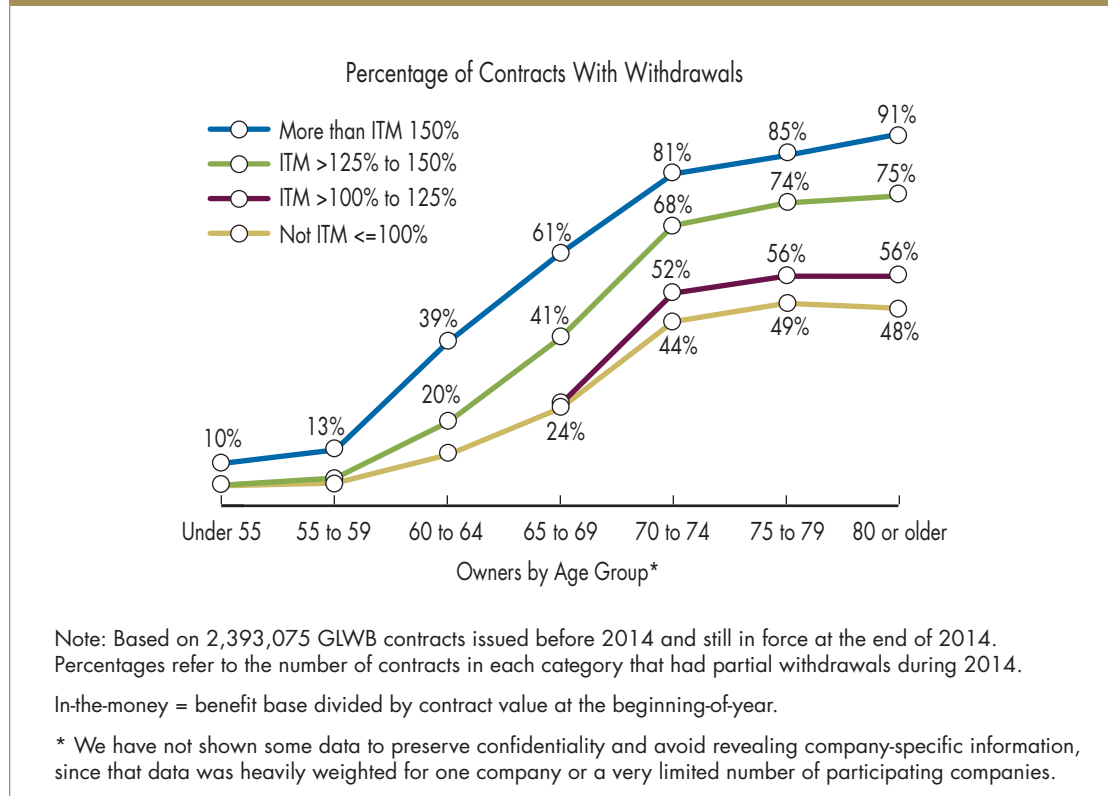
Figure 1-43: GLWB Withdrawal Rates for Contracts In-the-Money vs. Not In-the-Money



As shown earlier in this chapter, the percentage of owners taking withdrawals is linked closely with owners reaching age 70½ and the need to meet RMDs. So the overall increased withdrawal activity among owners aged 70 or older is mostly due to their taking withdrawals from contracts with longer durations — those most likely to be in-the-money. If in-the-moneyness were a forceful reason for taking withdrawals, owners aged 65 to 69 would have been more active in taking withdrawals and we would have seen a wider gap between the percentage of owners taking withdrawals from in-the-money contracts versus those not-in-the-money, or a sudden jump in withdrawal activity compared with previous years.

Looking at contracts being in-the-money by their magnitude and age, in isolation, may not provide a complete picture. Figure 1-44 shows increased levels of withdrawal activity with increasing levels of in-the-moneyness. For example, a higher percentage of owners took withdrawals from contracts with benefit bases more than 150 percent of the contract value, compared with those whose benefit base was between 100 and 125 percent of the contract value.

Figure 1-44: GLWB Withdrawal Rates for Contracts by Degree of In-the-Money vs. Not In-the-Money



While 85 percent of owners aged 70 or over took withdrawals in 2014 from their contracts where the benefit base was more than 150 percent of the contract values, only 54 percent of owners aged 60–69 — and 11 percent of owners under age 60 — took withdrawals, despite the apparent enticement to utilize in-the-money withdrawal riders.

Table 1-20 illustrates that primarily age, not benefits being in-the-money, drives owner withdrawal behavior, 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 exceeds 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 ranges between >100 percent to 125 percent. The effect is less significant among contract owners under age 60.

Table 1-20: GLWB Percentage of Owners Taking Withdrawals by Degree of In-the-Money

Degree of In-the-Moneyness (ITM)	Below Age 60	Age 60–69	Age 70 or Older
ITM ≤100%	4%	18%	46%
ITM >100% to 125%	*	18%	54%
ITM >125% to 150%	5%	32%	72%
ITM >150%	11%	54%	85%

* We have not shown this data to preserve confidentiality and avoid revealing company-specific information, since that data was heavily weighted for one company or a very limited number of participating companies.

In a separate analysis of withdrawals by degree of in-the-moneyness completed last year — controlling for year of issue — we found the following (which very likely followed a similar pattern this year):¹³

- More owners took withdrawals from older duration contracts. As more owners reach age 70½, they need to take withdrawals from their qualified contracts to satisfy RMDs. The analysis shows that the percentage of owners taking withdrawals decreases, irrespective of age and degree of in-the-moneyness, among shorter-duration 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, which in turn shows a distinctive gap between owners taking withdrawals from contracts more than 150 percent in-the-money

¹³ 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.

and owners with lower degrees of in-the-moneyness. Otherwise, there is no discernible difference among differing 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.

- The fact that the vast majority of owners who start withdrawals are likely to continue withdrawals in subsequent years also influences this trend. As they continue withdrawals, it is also likely these contracts will remain in-the-money even with the robust positive market performance of 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 more than half (56 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 all in-force contracts.
- There is a small portion of owners under age 70 who start their withdrawals immediately or a 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. Simply put, once owners start their withdrawals they are likely to continue withdrawals irrespective of the degree of in-the-moneyness.

If in-the-moneyness were a compelling reason to take withdrawals, we would have seen a bump in the percentage of owners taking their first withdrawals based on the degree of in-the-moneyness and we did not see this occur.

As we have mentioned before, half of the GLWB contracts were in-the-money at the beginning of 2014. If in-the-moneyness were a compelling reason to take withdrawals, we would have seen a bump in the percentages of owners taking their first withdrawals based on the degree of in-the-moneyness, but this did not occur.

Nearly 9 out of 10 contracts with withdrawals before 2014 continued to have withdrawals in 2014. 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 the proportion of owners taking withdrawals with higher levels of in-the-moneyness are lower among owners under aged 65 and higher among owners aged 65 or older, compared to owners with contracts where benefits are 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 periods of time, thus increasing the probability of contracts remaining in-the-money. However, the conclusion remains that, even among owners who started withdrawals earlier, owners kept taking withdrawals whether or not the contracts were in-the-money.

In addition, over the last few years we have seen very little support or evidence that in-the-moneyness 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 an eight-year period most of these contracts were exposed to different degrees of in-the-moneyness, especially between years 2009 and 2012. Yet we did not observe any significant difference in the onset of withdrawal activity during these years. If in-the-moneyness were a major driver of the decision to begin taking withdrawals, we would have seen a jump in withdrawal activity in 2009, when the contracts' contract values were likely to be well below their benefit bases following the major drop in values in 2008. The same can be said about 2012, when market volatility in late 2011 and low returns caused many contracts to start 2012 deep in-the-money. Instead, attained age and the need for RMDs for IRA contracts explained much of the pattern we observed.
- We also examined withdrawal activity for contracts issued before 2014, with no withdrawal activity in any prior years, split by owner age, year of issue, and beginning-of-year in-the-moneyness BB-to-CV ratio. (Sample restrictions prevent us from publishing these exact numbers.) If there were a clear in-the-moneyness effect, we would expect owners to activate their GLWBs to the extent that BB-to-CV ratios are high. Instead, we found that the likelihood of these owners initiating withdrawals, controlling for owner age and year of issue, was almost identical across in-the-moneyness levels.
- 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.

We conclude from this analysis that contract benefits being in-the-money is not a major driver of withdrawal behaviors of GLWB owners.

Withdrawal Activity for Contracts Issued in 2014

Withdrawal activity for contracts issued in 2014 (and still in force at EOY) was less common than for contracts issued before 2014 (Table 1-21). Overall, 10.6 percent of contracts issued in 2014 had some withdrawal activity; 9.2 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 February), 14 percent of contracts had withdrawals. After 11 months (contracts issued in November), only 7 percent had withdrawal activity.

The median amount withdrawn during 2014 was \$3,244; withdrawal amounts were highest among contracts issued early in the year. When the amounts withdrawn are annualized, the median values are generally between \$5,000 and \$5,500, which represent about 4 percent of current-year premium.

Table 1-21: GLWB Utilization by Month of Issue, Contracts Issued in 2014

Month Issued	Percent With Partial Withdrawal	Percent of Premium Withdrawn	Median Amount Withdrawn	Median Amount Withdrawn, Annualized*
January	14%	5.7%	\$5,494	\$5,494
February	14%	5.1%	\$5,026	\$5,482
March	13%	4.8%	\$4,520	\$5,424
April	12%	4.2%	\$4,125	\$5,500
May	12%	3.8%	\$3,667	\$5,501
June	12%	3.4%	\$3,500	\$6,000
July	12%	2.9%	\$3,044	\$6,088
August	11%	2.5%	\$2,394	\$5,744
September	10%	1.9%	\$1,860	\$5,580
October	9%	1.6%	\$1,300	\$5,200
November	7%	1.3%	\$805	\$4,830
December	2%	1.4%	\$754	\$9,048
Total	11%	3.5%	\$3,244	\$5,561

Note: Based on 29,667 contracts out of 279,596 contracts issued in 2014 that had partial withdrawals.
*Withdrawal amounts were annualized by multiplying them by 12 / (13 – months since BOY).

Utilization by Selected Characteristics

Utilization of GLWBs varies substantially across a variety of owner, contract, and benefit characteristics for contracts issued before 2014 (Table 1-22). These patterns are relatively consistent across utilization measurements, such as the percent of contracts with systematic withdrawals or the withdrawal rate weighted by contract value.¹⁴

Table 1-22: GLWB Utilization by Selected Characteristics

	Unweighted		Weighted by BOY 2014 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
Age of owner				
Under 50	3%	0%	4%	1%
50 to 54	3%	1%	4%	1%
55 to 59	4%	1%	5%	3%
60 to 64	12%	8%	15%	11%
65 to 69	25%	20%	28%	23%
70 to 74	50%	39%	50%	40%
75 to 79	55%	44%	53%	42%
80 or older	56%	45%	53%	42%
Market type				
IRA	27%	20%	30%	23%
Nonqualified	20%	17%	21%	17%
Gender				
Male	24%	19%	26%	21%
Female	25%	19%	27%	21%
Distribution channel				
Career agent	22%	14%	25%	16%
Independent agent/ independent B-D	25%	20%	28%	22%
Full Service National B-D	22%	17%	22%	18%
Bank	29%	23%	31%	25%

¹⁴ This measure of utilization should not be equated with the percentage of contract value withdrawn.

Table 1-22: GLWB Utilization by Selected Characteristics (continued)

	Unweighted		Weighted by BOY 2014 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
Contract value, EOY 2014				
Under \$25,000	22%	14%	30%	16%
\$25,000 to \$49,999	25%	19%	28%	20%
\$50,000 to \$99,999	26%	20%	28%	21%
\$100,000 to \$249,999	25%	20%	26%	21%
\$250,000 to \$499,999	26%	21%	27%	22%
\$500,000 or higher	24%	20%	25%	20%

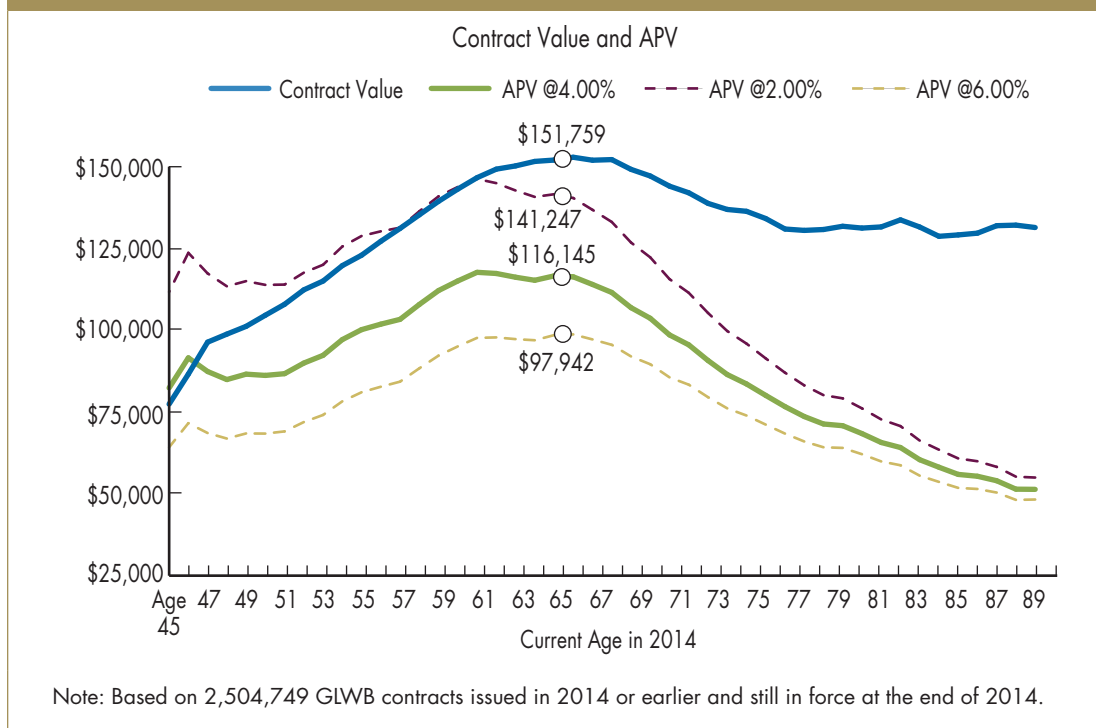
Note: Based on 2,455,928 GLWB contracts issued before 2014 and still in force at EOY 2014. Percentages refer to the number of contracts in each category that had partial (or systematic) withdrawals during the year. Systematic withdrawals represent a subset of all partial withdrawals. We have not shown measures related to asset allocation 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 higher among VA owners in IRAs (27 percent) than nonqualified VA owners (20 percent).
- Differences across channels in part reflect the age profiles of their customer bases. For example, a larger proportion of bank-issued contracts (with an older client base) take withdrawals compared to independent B-D issued contracts, 29 percent vs. 25 percent, respectively.
- Owners with larger VA contract values are slightly more apt to take withdrawals than are owners with smaller contract values.

GLWB Actuarial Present Value of Future Payments

Figure 1-45 presents an actuarial present value (APV) analysis of benefit-maximum guaranteed withdrawals for the in-force block of business by age, and compares the average APV to average contract values at the end of 2014.

Figure 1-45: GLWB Average Actuarial Present Value (APV) vs. Average Contract Value by Age at EOY 2014



The analysis is based on the following assumptions:

- All contract owners eligible to take withdrawals as of year-end 2014 do so under the current terms of the riders. Withdrawals are taken at the beginning of each year of analysis, and contract owners are assumed to take the maximum guaranteed annual withdrawal amount, which equals the higher of a) the BOY 2014 maximum guaranteed annual withdrawal amount as specified by companies, or b) the BOY 2014 maximum annual withdrawal percentage multiplied by each contract's benefit base on its anniversary date or, if not available, as of the end of 2014. If companies did not specify the BOY annual withdrawal percentage at the contract level, we determined it based on the rider specifications, with appropriate adjustment to the contract owner's age.

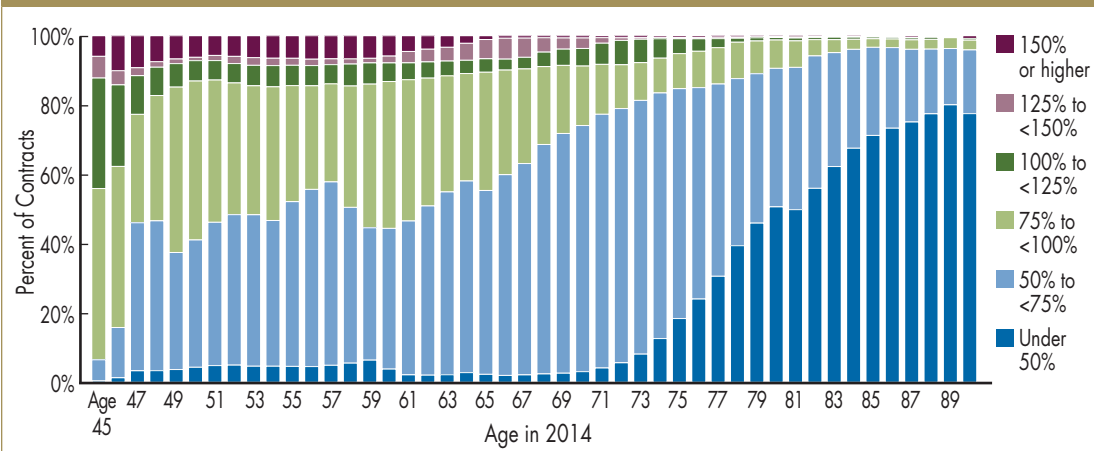
- Annual withdrawals or payments continue until the owner's gender- and age-specific life expectancy, using the U.S. Annuity 2000 Basic Mortality Table with projection scale G.
- We did not consider contract surrender activity or payment of guaranteed death benefits.
- APV analysis is based on an interest rate of 4.0 percent.¹⁵ We used two other interest rates at ± 200 basis points from this valuation rate (i.e., 2.0 and 6.0 percent) to assess the sensitivity of interest rate changes.
- We do not intend the industry to use this analysis as a measure of risk or efficiency of risk management in the industry, as we do not consider factors such as fees, lapse rates, effectiveness of hedging programs, asset allocation restrictions, and other related factors in the calculation.
- The results indicate that the average GLWB contract value exceeded the average APV at 4 percent for most ages at EOY 2014. For example, the average contract value for all 65-year-old owners was \$151,800, while the average APV of benefit-maximum payments was \$116,100, using the interest rate assumption of 4.0 percent. The total APV of benefit maximum withdrawals for 2.5 million GLWB contracts stood at \$255 billion, 27 percent lower than total contract values at \$350 billion at the end of 2014.

In aggregate, the APVs were close to contract values among contracts owned by individuals in their early 50s or younger. In general, for customers aged 70 or over, the EOY contract values were larger than EOY discounted cash outflows of guaranteed withdrawals.

Figure 1-46 shows that not all of the GLWB contract values exceed their APV. Ten percent of all GLWB contracts had APVs above their contract values.

- Twenty-one percent of contracts owned by customers aged 45–59 had APVs higher than the contract values. This age group held just under a quarter of all GLWB contracts at the end of 2014.
- Eleven percent of owners aged 60 to 69 and only 7 percent of owners aged 70 to 79 had APVs greater than their contract values. For customers aged 80 or over, almost all of the contracts had larger contract values compared to APVs. However, the APV for 26 percent of contracts remained within the range of 75 to <100 percent of their contract values.

¹⁵ 2015 Prescribed U.S. Statutory and Tax Interest Rates for the Valuation of Life Insurance and Annuity Products, Tower Watson, September 2015. The rate is for annuities issued in 2014, without cash settlements, issue year valuations, with or without interest guarantees on considerations, received more than one year after issue with guarantee duration of more than 10 years but not more than 20 years.

Figure 1-46: GLWB Ratio of APV at 4.00% to Contract Value Distribution by Age

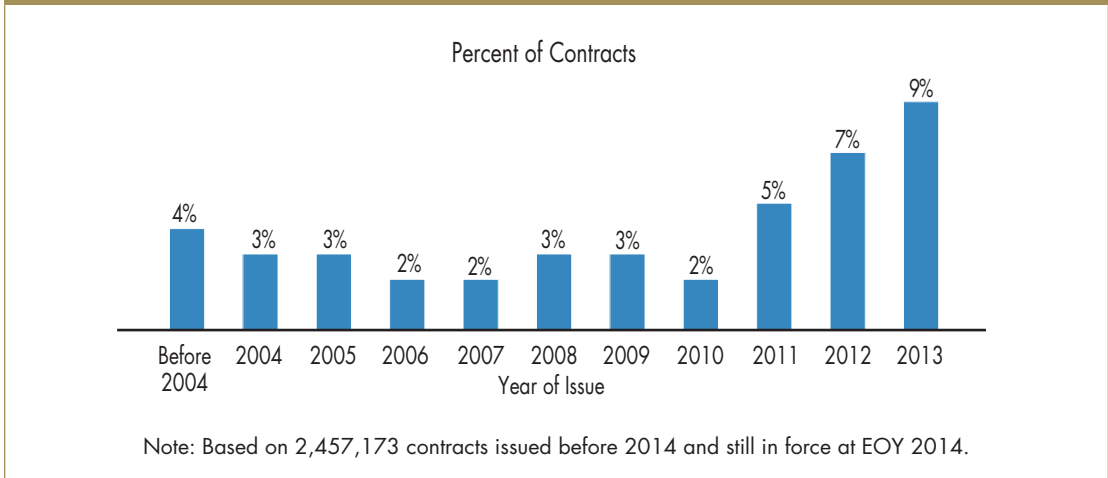
Note: Based on 2,418,064 GLWB contracts issued in 2014 or earlier and still in force at the end of 2014.

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. For contracts issued before 2014:

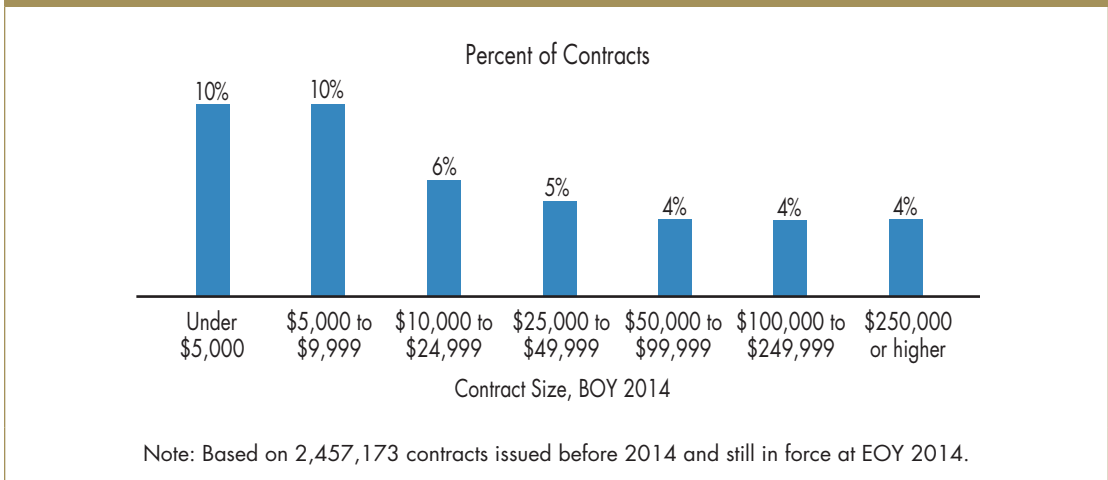
- Received nearly \$3.7 billion in additional premium in 2014.
- Four percent received additional premium in 2014. Contracts issued in 2013 were more likely than contracts issued in earlier years to have additional premium (9 percent) (Figure 1-47).
- Younger owners are more likely to add premium than older owners. For example, 10 percent of owners under age 50 added premium, compared with 2 percent of owners aged 70 or older. Seven percent and 5 percent of owners aged 50–59 and aged 60–64 respectively added additional premium to their contracts in 2014.

Figure 1-47: GLWB Percentage of Contracts Receiving Additional Premium



One in 10 contracts that had BOY contract values under \$5,000 received additional premiums (Figure 1-48). The average additional premium received in 2014 was \$33,587 (median of \$10,000).

Figure 1-48: GLWB Percentage of Contracts Receiving Additional Premium by Size of Contract

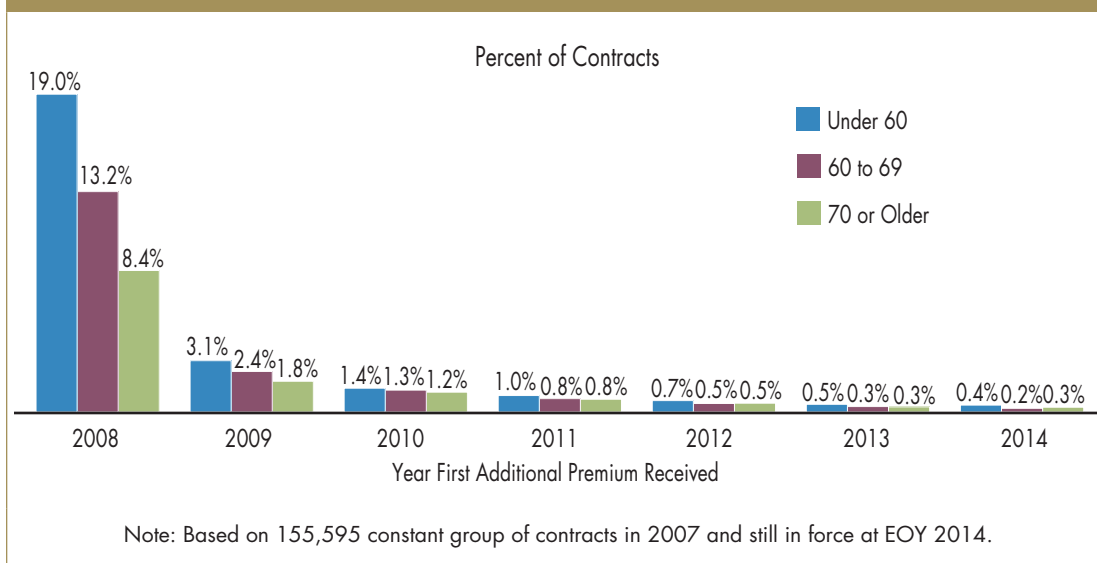


Owners rarely add premium after the second year of owning a GLWB contract (Figure 1-49). Based on a constant group of contracts issued in 2007, 14.6 percent added premium in one of the calendar years after issue, and only 6.0 percent added premium two or more years after the year of issue. In addition, younger owners are more likely to put additional premiums into their contracts.

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

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 and 2009.

Figure 1-49: 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 — \$42.3 billion and \$19.5 billion, respectively (Table 1-23). The total number of GLWB contracts in force grew by over 7 percent during 2014. At year-end, GLWB assets were \$376.7 billion, 9 percent higher than \$345.5 billion at BOY 2014.

Table 1-23: GLWB Net Flows

	Dollars (Billions)	Contracts	Average Contract Size
In-force, BOY 2014	\$345.5	2,567,158	\$134,584
Premium received			
Newly issued contracts	\$38.6	280,396	\$137,814
Existing contracts	\$3.7	N/A	N/A
Benefits paid			
Partial withdrawals	\$7.3	N/A	N/A
Full surrenders	\$10.1	93,457	\$108,390
Annuitizations	\$0.1	869	\$127,074
Death/Disability	\$2.0	16,434	\$119,428
Investment growth	\$8.4	N/A	N/A
In-force, EOY 2014	\$376.7	2,736,794	\$137,642

Note: Based on 2,847,554 GLWB contracts in the study. Dollar values for contracts issued before 2014 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 2014 that terminated during the year were set equal to the current-year premium.

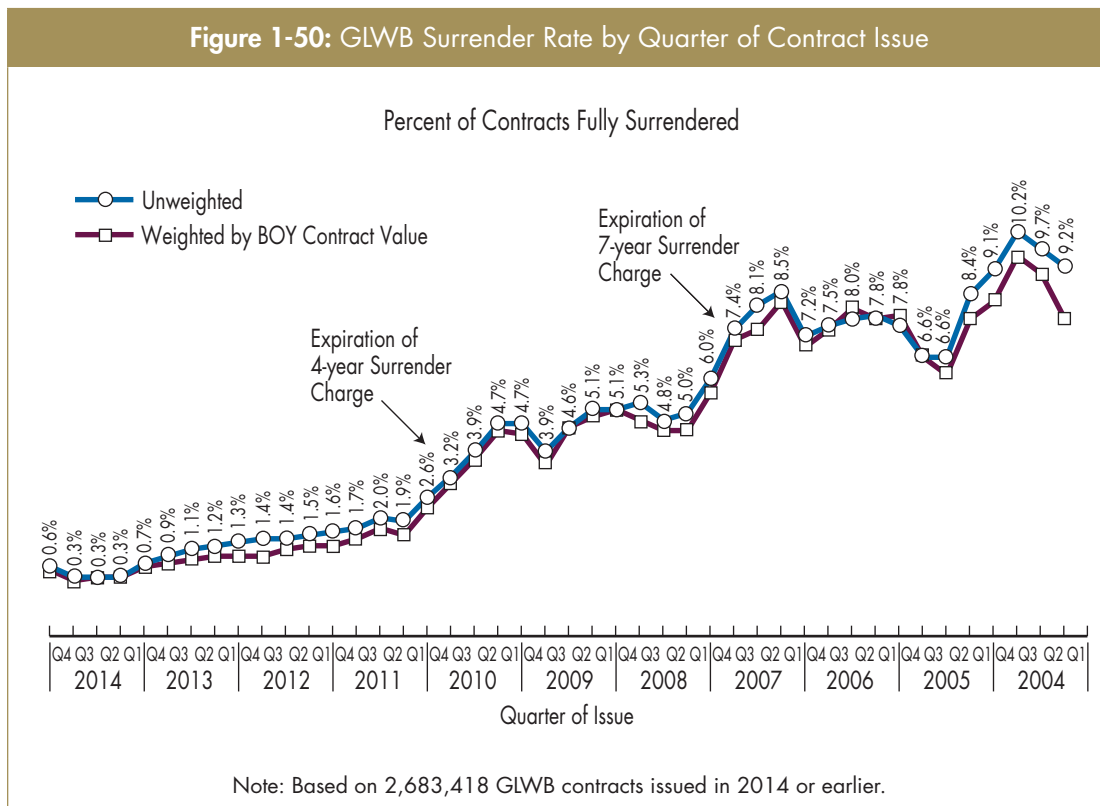
Persistence

2014 GLWB
contract surrender
rate = **3.6%**.

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

Surrender rates for VAs with GLWBs in 2014 were relatively low, even among contracts issued five years earlier (Figure 1-50). Across all contracts issued before 2014, 3.6 percent surrendered during 2014, higher than the surrender rates experienced in 2012 and 2013. There was a noticeable increase in surrender rates at the expiration of the L-share and B-share surrender charge. For business issued before 2014, cash value surrender rates were 3.3 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 2.1 percent in 2014.¹⁶

Figure 1-50: GLWB Surrender Rate by Quarter of Contract Issue



¹⁶ Based on analysis of LIMRA Secure Retirement Institute U.S. Annuity Persistency Survey Data

Surrender Activity by Share Class and Presence of Surrender Charge

Looking at the surrender rates by the presence of surrender charges shows that persistency among contracts with surrender charges was higher than for contracts without surrender charges. Almost all (90 percent) of B-share contracts and 45 percent of the L-share contracts were within the surrender charge periods in 2014. Figure 1-51 shows contract surrender rates and Figure 1-52 shows cash value surrender rates for contracts by share classes.

Figure 1-51: GLWB Contract Surrender Rates in 2014 by Share Classes

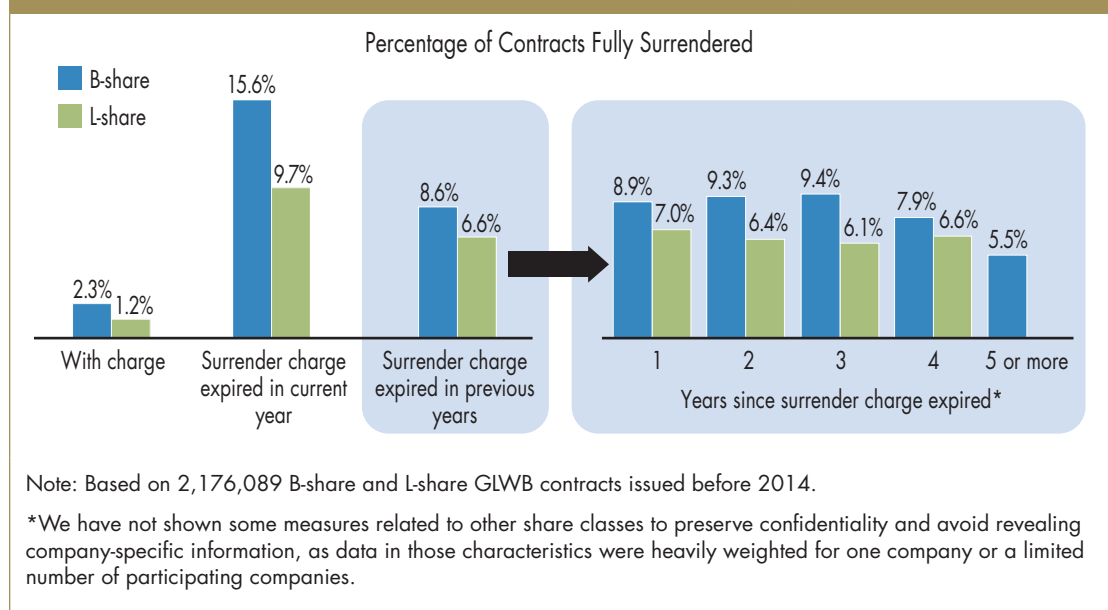
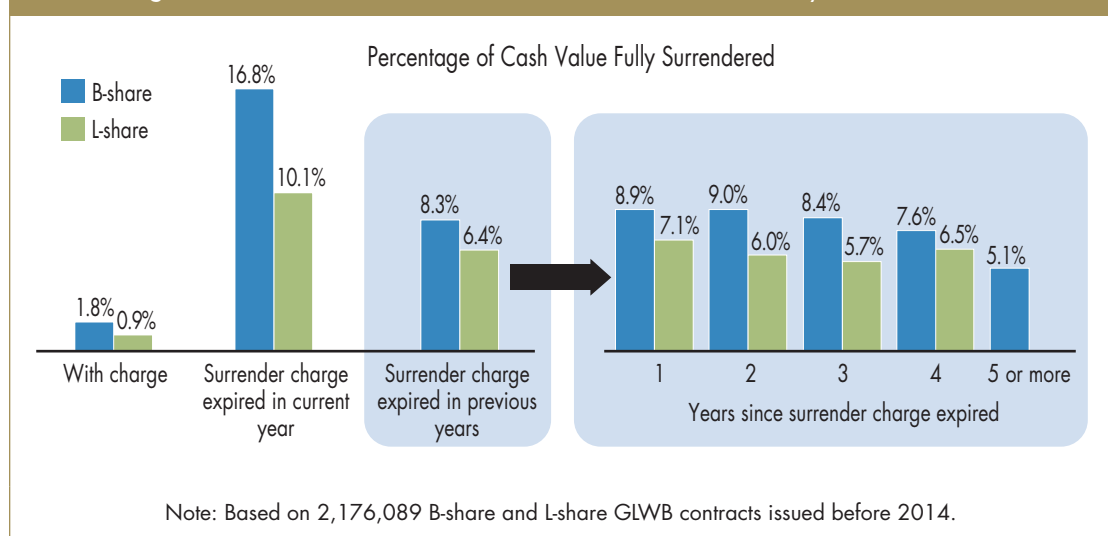


Figure 1-52: GLWB Cash Value Surrender Rates in 2014 by Share Classes



- With B- and L-share combined, 76 percent of GLWB contracts were under surrender penalty.
- The contract surrender rates for B-share and L-share contracts with a surrender charge were 2.3 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 8.7 percent compared with 2.1 percent for contracts that had surrender charges.

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 1-53 and 1-54). At EOY 2014, 64 percent of the almost 1.6 million contracts had surrender charges of 4 percent or more. Twenty-four percent of the contracts (around 380,000 contracts) were free of surrender charges.

Figure 1-53: GLWB Contract Surrender Rate by Surrender Charge Percentage

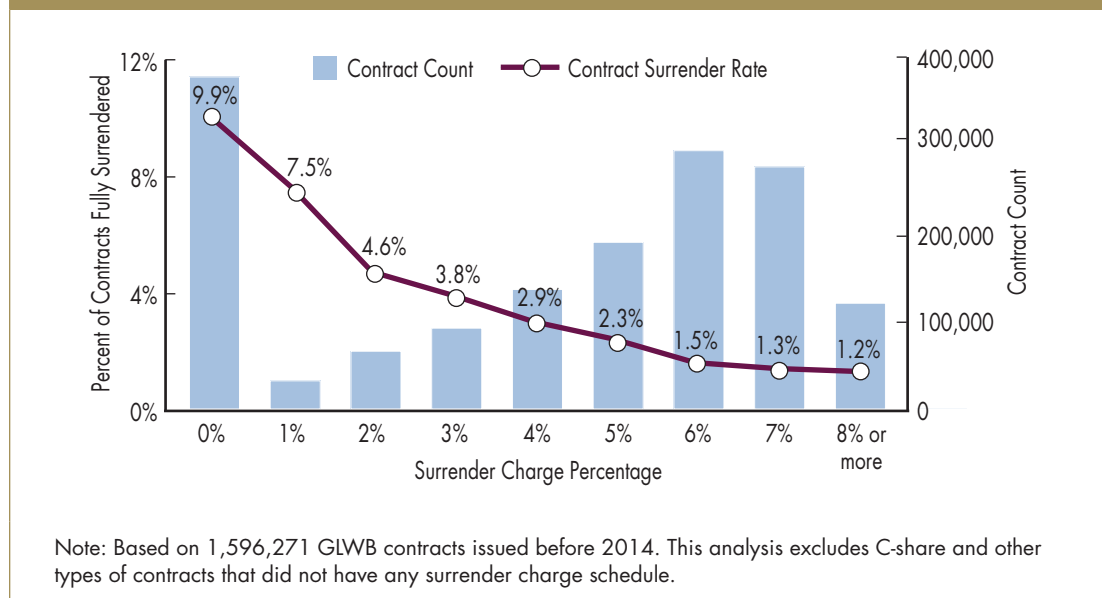
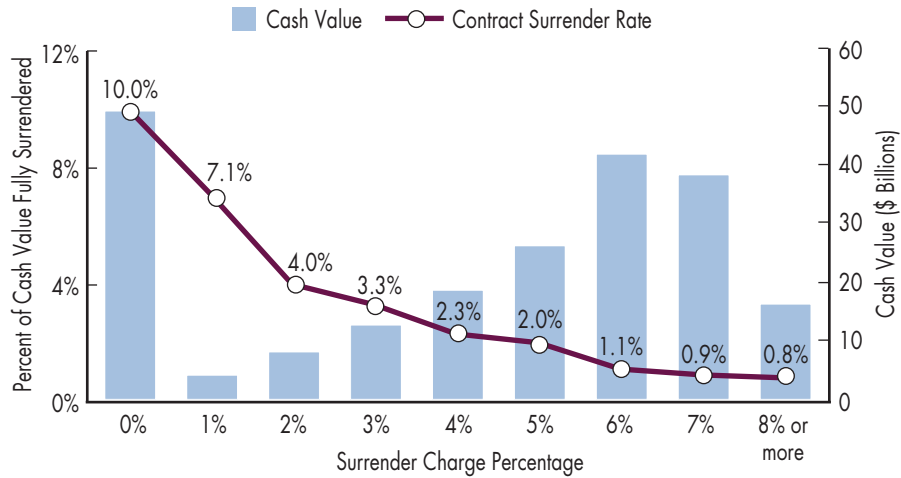


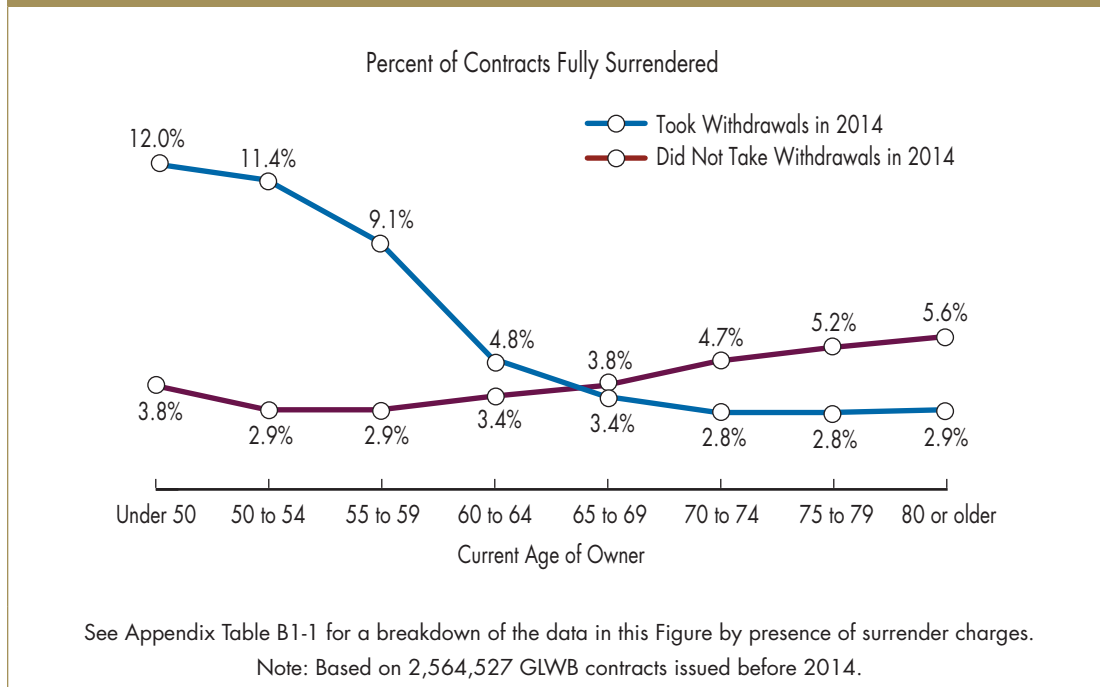
Figure 1-54: GLWB Cash Value Surrender Rate by Surrender Charge Percentage



Note: Based on 1,596,271 GLWB contracts issued before 2014. This analysis excludes C-share and other types of contracts that did not have any surrender charge schedule.

Surrender Activity of Owners Taking Withdrawals

Younger owners have higher surrender rates, particularly those under age 60 who took withdrawals before or in 2014. We have already shown that even though younger owners own a significant portion of GLWB contracts, most of them are not likely to take withdrawals. When some of these younger owners take withdrawals, they typically do so through occasional withdrawals. Moreover, their average withdrawal amount is much higher, and not likely to be supported by the guaranteed benefit base in their contracts. It is likely that these younger owners are really taking partial surrenders. Younger owners who took withdrawals in 2014 were also very likely to fully surrender their contracts (Figure 1-55).

Figure 1-55: GLWB Contract Surrender Rate by Owners Taking Withdrawals in 2014

Twelve 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 2014 subsequently surrendered their contracts by EOY. Some of these younger owners may have had emergency needs, others may have become dissatisfied with their contracts or been influenced by their advisors to surrender the contracts.

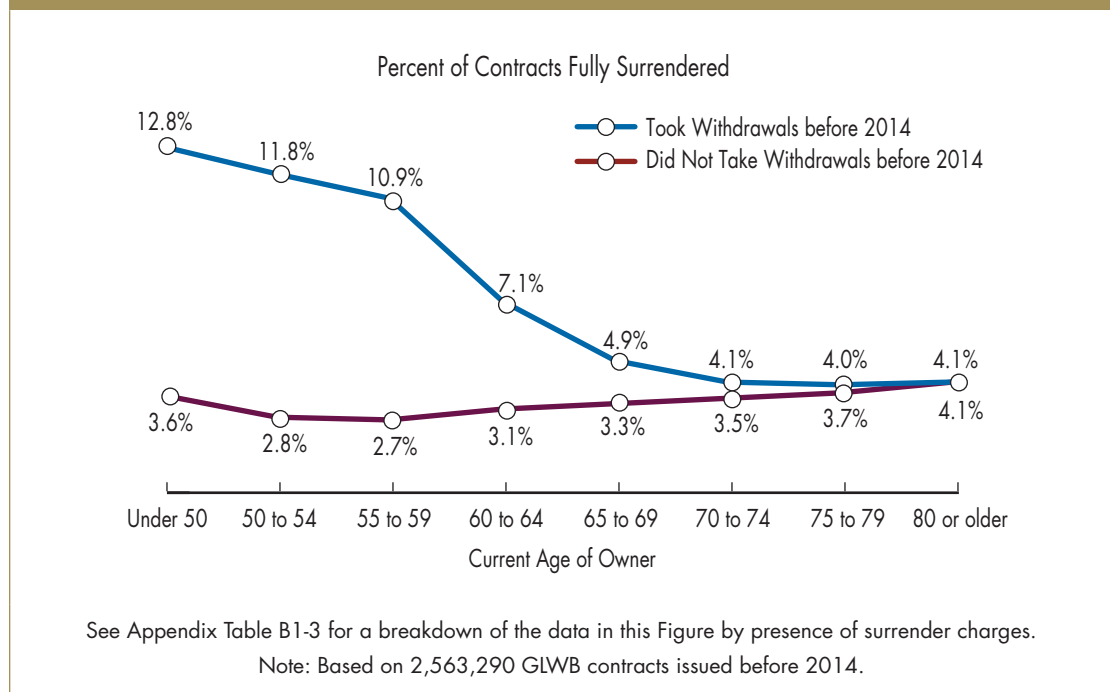
Contract surrender rate among owners under age 60 who took withdrawals in 2014 = 10.1%.

Contract surrender rate among owners under age 60 who did not take any withdrawals in 2014 = 3.0%.

The contract surrender rate among owners under age 60 who took withdrawals in 2014 was 10.1 percent. On the other hand, the surrender rate was only 3.0 percent among owners under age 60 who did not take any withdrawals in 2014. The surrender rate for owners aged 60 or older who took withdrawals in 2014 (3.2 percent) was slightly lower than those who did not take withdrawals (4.0 percent).

Past withdrawals can also indicate whether younger owners will fully surrender contracts in future. Figure 1-56 shows the surrender rate for owners who took withdrawals before 2014.

Figure 1-56: GLWB Contract Surrender Rate by Owners Taking Withdrawals Before 2014



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. There was an increased likelihood of surrender for contracts where owners under age 60 took withdrawals, either in current or past years. However, this increased surrender activity did not occur for owners over age 60 who took withdrawals. For them, a withdrawal in one year did not necessarily signal a higher likelihood of surrender in the next year. In general, those who do not take 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.

In general, GLWB surrender rates are relatively low for those who do not take withdrawals, regardless of age.

We also looked at the cash value surrender rates of contracts with withdrawals in 2014. The cash value surrender rates follow a similar pattern as the contract surrender rates except the cash value surrender rates tend to be slightly lower, particularly for younger owners under age 70 who took withdrawals (Figures 1-57 and 1-58).

Figure 1-57: GLWB Cash Value Surrender Rate by Owners Taking Withdrawals in 2014

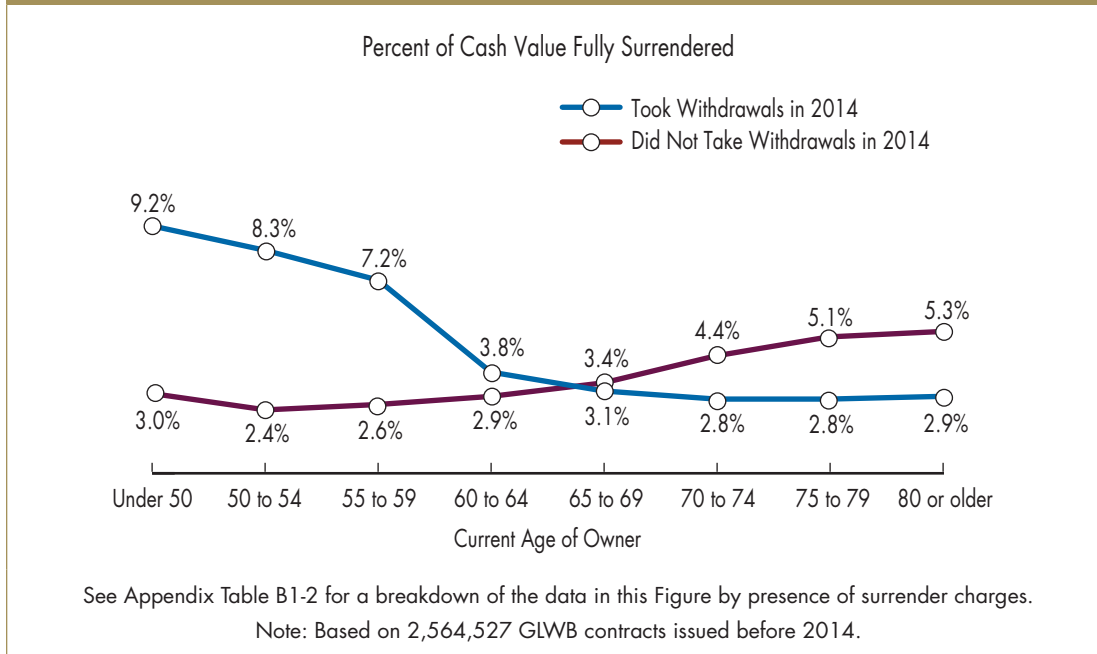
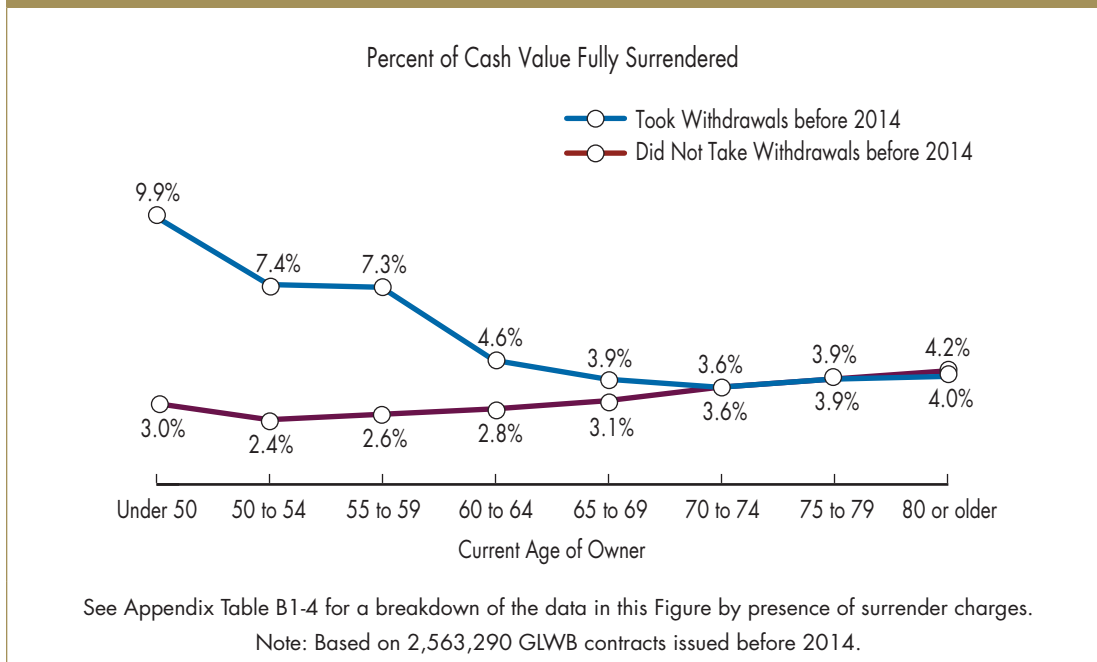


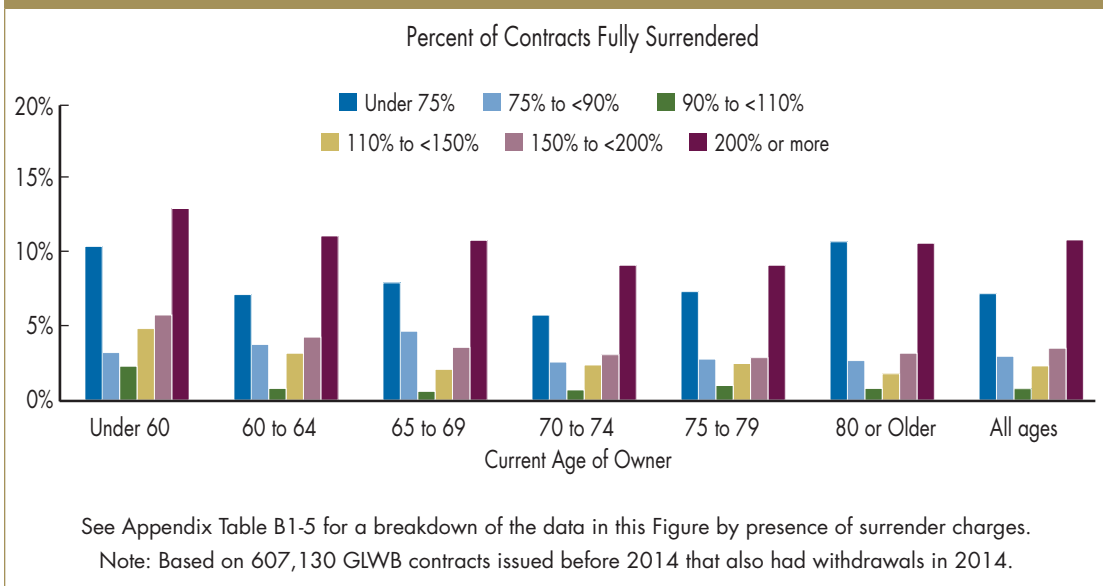
Figure 1-58: GLWB Cash Value Surrender Rate by Owners Taking Withdrawals Before



Surrender Activity by Percentage of Annual Benefit Maximum Withdrawn

Figure 1-59 shows the contract surrender rates for owners who took withdrawals in 2014, based on the percentage of annual benefit maximum withdrawn. Contract surrender rates for owners who took withdrawals under 75 percent of the maximum allowed in the contracts, and for owners who took 200 percent or more of the maximum allowed, are quite high.

Figure 1-59: GLWB Contract Surrender Rates by Owners Taking 2014 Withdrawals in Relation to 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 owners who took withdrawals of between 75 percent to less than 200 percent of the maximum withdrawal amount allowed in the contracts are relatively low. This is true across all age groups.
 - This group of owners constitutes more than 72 percent of all owners who took withdrawals in 2014.
 - As a group, the surrender rate among these owners is very low, only 1.4 percent.
 - Surrender rate is the lowest (0.8 percent) among owners who took between 90 percent and <110 percent of the maximum benefit allowed.

The owners who withdrew between 110 percent and <150 percent of the maximum withdrawal amount are few, only 8 percent, and the surrender rate for them is also low at 2.3 percent.

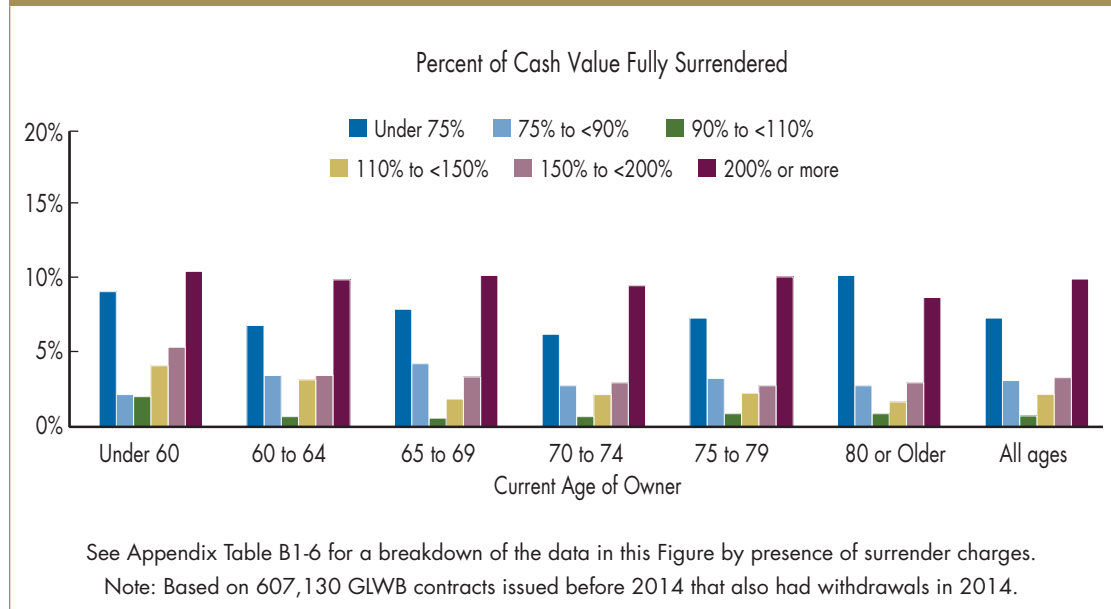
- One sixth of all owners who took withdrawals in 2014 took less than 75 percent of the maximum withdrawal amount allowed in the contract. Surrender rate for this group is relatively high at 7.3 percent and noticeably higher for these contract owners across all age groups. These contract owners may not be utilizing the maximum allowed guaranteed withdrawal benefit, as they are not taking advantage of the maximum withdrawal amount allowed in the contract.
- Eleven percent of GLWB owners took withdrawals of 200 percent or more of the maximum withdrawal amount allowed in their contracts. Surrender rates among these contracts were 10.9% and were 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 36 percent of all GLWB contracts surrendered in 2014 and 27 percent of the cash surrender values in 2014.

71% of all contracts surrendered in 2014 came from owners who withdrew either less than 75 percent or 200 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 200 percent or more of the maximum withdrawal amount allowed in their contracts accounted for nearly one third of all owners who took withdrawals in 2014. But they were responsible for 71 percent of contracts surrendered and 69 percent of cash surrender values in 2014.

The cash value surrender rates among owners who took withdrawals in 2014 by the percentage of benefit maximum withdrawn follow a very similar pattern to the contract surrender rates. The only difference is that cash value surrender rates are typically slightly lower, particularly for younger owners under age 60 taking withdrawals that are under 75 percent or 200 percent or more than the benefit maximum (Figure 1-60).

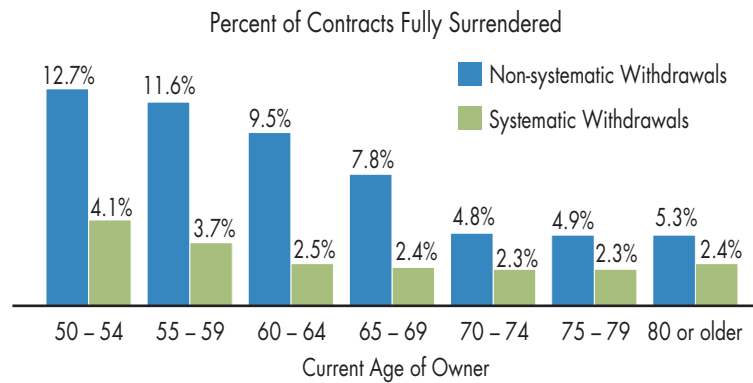
Figure 1-60: GLWB Cash Value Surrender Rates by Owners Taking 2014 Withdrawals in Relation to Benefit Maximum Allowed



Surrender Activity by Owners Taking Systematic Withdrawals

Another strong indicator of whether owners are likely to surrender their contracts is the method they use to take withdrawals — systematic or non-systematic (Figure 1-61). 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 1-61: GLWB Contract Surrender Rates by Withdrawal Methods



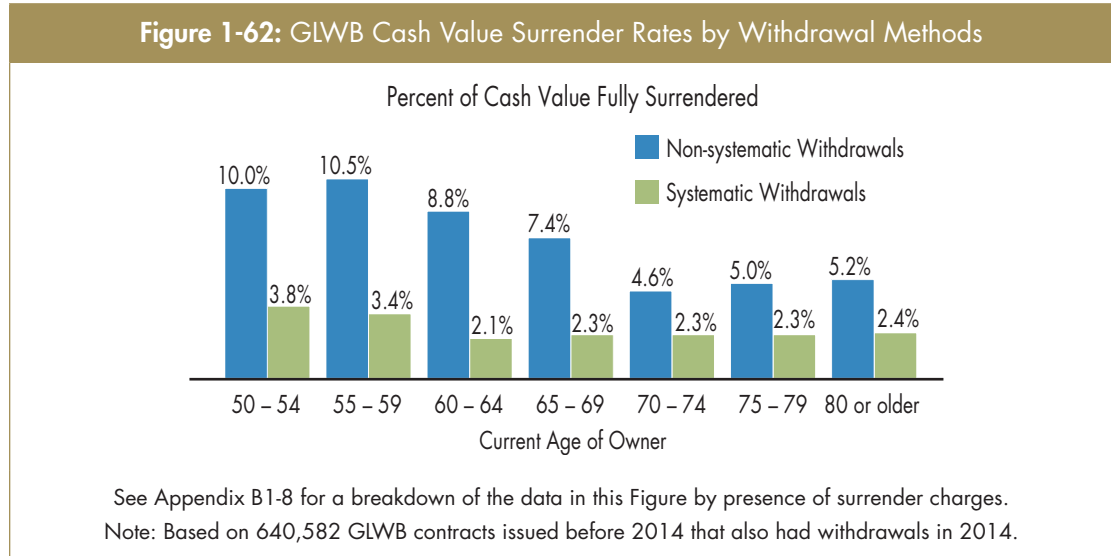
See Appendix B1-7 for a breakdown of the data in this Figure by presence of surrender charges.
 Note: Based on 640,582 GLWB contracts issued before 2014 that also had withdrawals in 2014.

Overall, the contract surrender rate for owners who took non-systematic withdrawals in 2014 was 7.2 percent, while the surrender rate for owners who withdrew systematically was a very low 2.4 percent. Non-systematic withdrawals do not always maximize their benefit withdrawals.

Owners taking non-systematic withdrawals accounted for just under a quarter of all owners taking withdrawals; but they account for half of all surrendered contracts and almost half of cash surrender values in 2014. 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 for owners who take non-systematic withdrawals = **7.2%**. Contract surrender rates for owners who took systematic withdrawals = **2.4%**.

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 1-62).



Surrender Activity Based on the Amount the Benefit Base Exceeds Contract Value

Another important analysis of surrender rates involves whether or not the benefit base is greater than the contract value. Surrender rates for most issue years are lower when the benefit base is greater than the contract value (Figures 1-63 and 1-64).

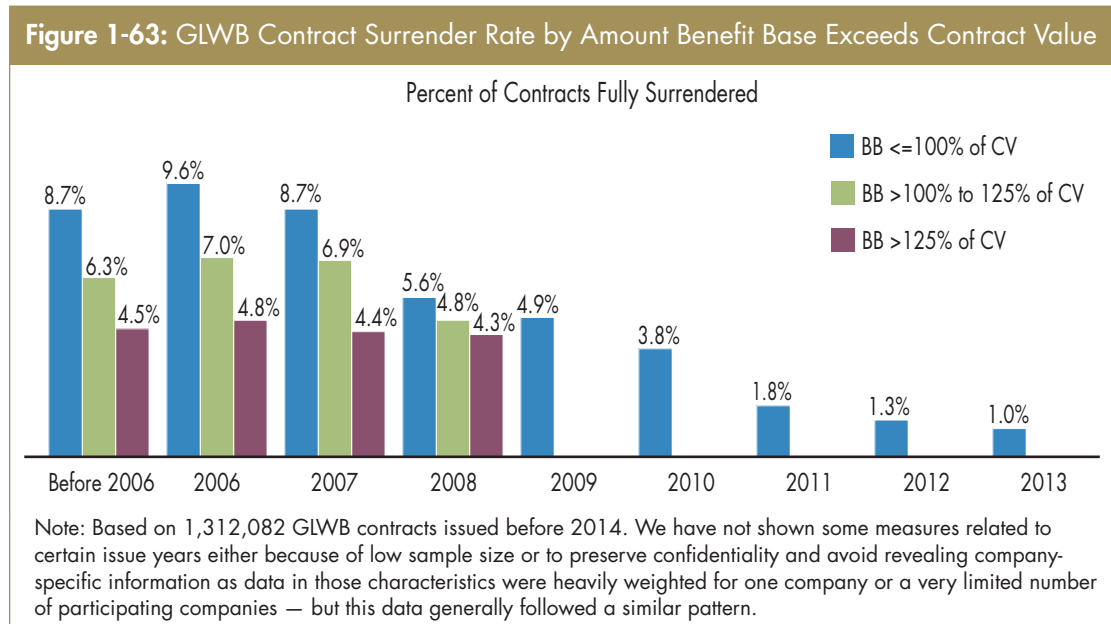
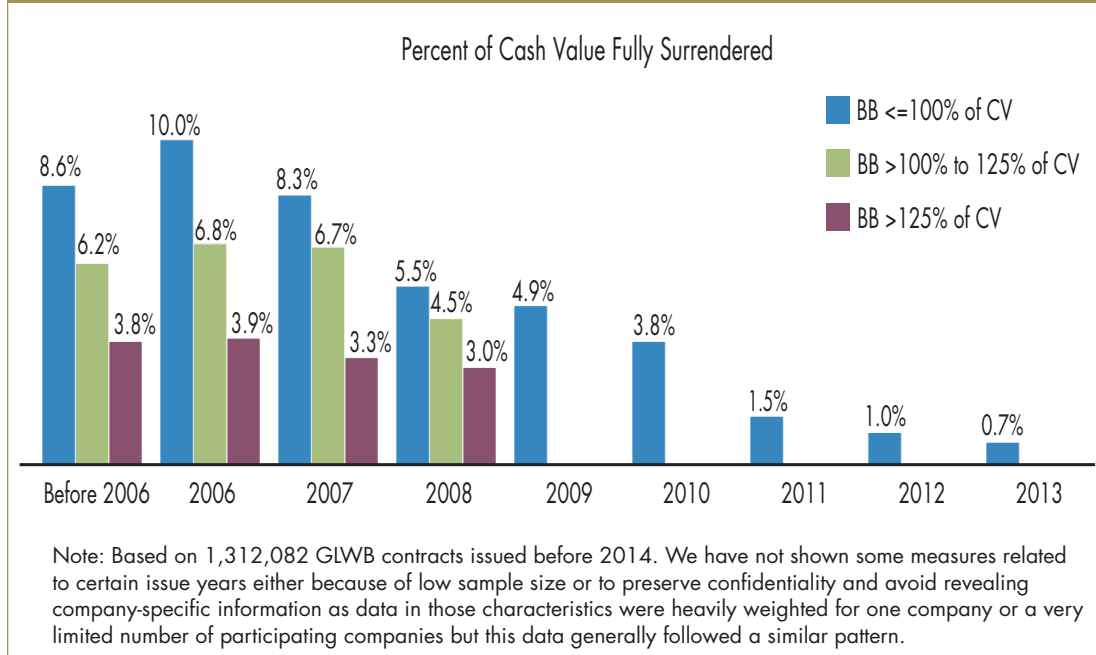


Figure 1-64: GLWB Cash Value Surrender Rate by Amount Benefit Base Exceeds Contract Value



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

However, looking at the surrender rates based only on the amount by which the benefit base exceeds the contract value may not completely address all issues when trying to understand the persistency risk. Owner surrender behavior is also closely connected with withdrawal behavior. Insurance companies assume more risk when the business left has more contracts where the benefit base amounts are greater than the contract values, and these contracts have lower surrender rates. They need to fulfill their commitments on withdrawal guarantees if owners decide to start or continue withdrawals.

Insurance companies can look at surrender rates and their relationship to owner withdrawal behavior since there are some connections:

- 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 great a withdrawal amount compared with the benefit maximums allowed in the contract are more 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 they may use the rider benefits.
- 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.
- Owners who are taking withdrawals through an SWP are likely to remain within benefit maximums and are less likely to surrender their contracts.
- Surrender rates are low in contracts where the benefit base amounts exceed the contract values.
- Although older owners are about as likely to surrender their contracts as younger owners, their contract values tend to be higher (Table 1-24). This situation results in relatively higher contract-value-weighted surrender rates for older age groups.
- Owners with contract values less than \$25,000 have the highest surrender rates across the different bands of contract sizes (at BOY 2014).
- GLWBs issued through banks have the highest surrender rates by distribution channel.
- Nearly all contracts issued during 2013 remained in force at the end of that year (99 percent).

Table 1-24: GLWB Surrender Rates

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
All contracts issued before 2014	3.6%	3.3%
Year of issue		
Before 2004	6.1%	5.9%
2004	9.6%	8.6%
2005	7.2%	7.1%
2006	7.5%	7.4%
2007	7.4%	6.9%
2008	5.0%	4.8%
2009	4.5%	4.3%
2010	3.5%	3.3%
2011	1.8%	1.4%
2012	1.4%	1.0%
2013	1.0%	0.8%
Age of owner		
Under 50	4.1%	3.3%
50 to 54	3.2%	2.7%
55 to 59	3.2%	2.8%
60 to 64	3.6%	3.0%
65 to 69	3.7%	3.3%
70 to 74	3.8%	3.6%
75 to 79	3.9%	3.9%
80 or older	4.1%	4.1%
Contract value, BOY 2014		
Under \$25,000	6.2%	5.3%
\$25,000 to \$49,999	3.9%	3.9%
\$50,000 to \$99,999	3.3%	3.3%
\$100,000 to \$249,999	3.0%	3.0%
\$250,000 to \$499,999	3.2%	3.2%
\$500,000 or higher	3.5%	3.6%
Gender		
Male	3.7%	3.4%
Female	3.5%	3.2%
Market type		
IRA	3.6%	3.2%
Nonqualified	3.7%	3.5%

Table 1-24: GLWB Surrender Rates (continued)

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
Distribution channel		
Career agent	2.2%	1.8%
Independent agent/independent B-D	4.0%	3.5%
Full Service National B-D	3.7%	3.7%
Bank	4.5%	4.0%
Cost structure		
B-share	3.3%	2.8%
C-share/no load	4.7%	4.3%
L-share	4.6%	4.4%
O-share/level load	1.2%	1.2%

Note: Based on 2,565,872 contracts issued before 2014. 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 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 1-25).

Table 1-25: GLWB 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	Issued in 2013	Issued in 2014
Number of contracts:	79,255	135,733	242,590	301,631	339,375	364,000	393,965	373,653	336,956	280,396
Avg. mortality and expense charge	1.43%	1.43%	1.38%	1.38%	1.37%	1.31%	1.28%	1.25%	1.25%	1.22%
Average benefit fee	0.75%	0.67%	0.65%	0.82%	0.97%	1.00%	1.04%	1.04%	1.07%	1.14%
Average number of subaccounts	75	72	68	66	73	61	57	57	56	54
Product has fixed account										
Yes	87%	85%	87%	88%	95%	98%	97%	96%	95%	96%
No	13%	15%	13%	12%	5%	2%	3%	4%	5%	4%
Product still available as of 12-31-14										
Yes	35%	29%	35%	35%	33%	70%	86%	92%	95%	99%
No	65%	71%	65%	65%	67%	30%	14%	8%	5%	1%
Rider still available as of 12-31-14										
Yes	2%	9%	13%	8%	7%	10%	16%	24%	70%	86%
No	98%	91%	87%	92%	93%	90%	84%	76%	30%	15%
Cap on benefits										
Yes	16%	27%	39%	37%	33%	35%	38%	42%	52%	49%
No	84%	73%	61%	64%	67%	65%	62%	58%	49%	51%
Benefit fee basis*										
Contract value	21%	38%	19%	5%	3%	5%	5%	6%	8%	14%
Benefit base	45%	36%	68%	90%	95%	94%	65%	52%	65%	63%
VA subaccounts	32%	24%	12%	5%	1%	1%	29%	40%	25%	21%
Other	2%	2%	1%	0%	0%	0%	0%	1%	2%	1%

Table 1-25: GLWB 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	Issued in 2013	Issued in 2014
Average maximum age at election	91	87	85	85	88	90	86	84	84	83
Average minimum age at onset of lifetime benefits	55	57	58	58	53	52	52	52	54	53
Average maximum age at onset of lifetime benefits	98	98	98	98	96	95	91	89	90	87
Asset allocation restrictions										
Forced asset allocation model	34%	39%	33%	29%	22%	18%	23%	19%	18%	13%
Limitations on fund selection	11%	12%	8%	6%	8%	11%	13%	9%	13%	16%
Other restrictions	1%	7%	14%	25%	8%	4%	5%	8%	15%	19%
None/may restrict allocations	13%	3%	7%	9%	11%	11%	10%	5%	0%	0%
Dynamic asset allocation	40%	39%	37%	31%	51%	55%	49%	47%	27%	24%
Managed volatility funds	1%	0%	0%	0%	0%	0%	0%	12%	27%	28%
Step-up availability**										
Quarterly or more frequently	1%	7%	12%	20%	3%	0%	0%	0%	0%	0%
Annually	96%	90%	87%	79%	97%	100%	100%	100%	100%	100%
Every 3 years	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%
Every 5 years	2%	2%	1%	1%	0%	0%	0%	0%	0%	0%
Benefit base automatically increases if withdrawals are deferred										
Yes, based on simple interest	34%	35%	27%	26%	20%	26%	32%	23%	28%	34%
Yes, based on compound interest	55%	35%	40%	58%	69%	69%	63%	71%	65%	60%
No	11%	31%	33%	16%	10%	6%	5%	6%	7%	6%
Payments can continue to spouse after owner's death										
Yes	23%	35%	51%	61%	58%	61%	64%	56%	65%	68%
No	77%	65%	49%	39%	42%	39%	36%	44%	35%	32%

Table 1-25: GLWB 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	Issued in 2013	Issued in 2014
Maximum annual withdrawal percent										
3% or under	0%	0%	0%	0%	1%	3%	10%	12%	5%	6%
>3% to 4%	5%	2%	2%	3%	20%	32%	31%	33%	39%	42%
>4% to 5%	60%	56%	63%	65%	55%	46%	43%	47%	44%	40%
>5% to 6%	2%	19%	23%	24%	20%	17%	14%	6%	9%	8%
>6% to 7%	32%	23%	12%	7%	2%	1%	1%	0%	0%	0%
>7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Impact on benefit base if excess withdrawal are taken										
Pro rata	88%	90%	83%	89%	90%	89%	81%	77%	82%	83%
Dollar-for-dollar	3%	17%	18%	11%	15%	17%	29%	24%	18%	15%
None if RMDs from IRA	93%	92%	90%	96%	99%	100%	99%	99%	83%	75%
Other	13%	21%	31%	28%	21%	22%	35%	44%	50%	62%
Among contracts with maximum charge info provided										
Standard rider charge	0.76%	0.68%	0.66%	0.82%	0.97%	1.01%	1.07%	1.05%	1.06%	1.09%
Maximum rider charge	1.41%	1.34%	1.45%	1.53%	1.52%	1.60%	1.67%	1.71%	1.90%	2.00%
*If the benefit fee was based on the higher of benefit base or contract value, then the basis categorization was determined for each individual contract.										
**Among contracts that allowed multiple step-ups										
Note: Based on 2,816,295 GLWB contracts issued in 2014 or before.										

Key Findings

- The average buyer in 2014 paid about 236 basis points for a VA with a GLWB (M&E and rider fees, not including subaccount fees), as a percentage of contract value, VA subaccounts, or benefit base values.
- Just under two thirds of the 2014 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.
- Asset allocation restrictions are an important way to manage risk for the insurance companies. Almost 3 in 10 contracts issued in 2014 require a managed volatility fund.
- The average number of subaccounts for contracts issued in 2014 was 54, a slight decline from the last three years.

- Six out of seven riders issued in 2014 were still available as of EOY 2014. Only 24 percent of riders issued in 2012 are still available.
- On average, owners who bought contracts in 2014 can take lifetime benefits as early as age 53 and can elect the GLWB until they reach age 83. 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 2010, all contracts went back to a conservative annual step-up option.
- Two thirds of the 2014 contracts with GLWBs have spousal lifetime withdrawal privileges.
- Sixty percent of 2014 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 2014, nearly 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 2014, it had dropped to around 8 in 10 contracts. RMD-friendly contracts have also been reducing, where all of the contracts issued in 2010 were RMD-friendly to 3 in 4 in 2014 being RMD-friendly.

Chapter Two

2014 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 balance until the guaranteed payments were exhausted, even if the contract value itself had already fallen to zero.¹⁷ The benefit base was usually the sum of premium payments and there was no lifetime guarantee. Later versions enhanced the benefit base balance 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 balance) 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 low. New sales of GMWBs in 2014 dropped to \$0.8 billion, down from \$1.1 billion in 2013 and \$1.4 billion in 2012. GMWB election rates, when any GLB was available, remained low, around 1 percent.¹⁸ 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 \$23.0 billion of annuity assets from 213,459 GMWB contracts issued by 13 companies. Of these contracts, 191,761 were issued before 2014 and were in force as of December 31, 2014. The LIMRA Secure Retirement Institute estimates that industry GMWB assets totaled \$34.5 billion at end-of-year (EOY) 2014. This study represents two thirds of industry GMWB assets from a total of 29 GMWB riders (or hybrid with GMWB features) introduced between 2000 and 2014.

¹⁷ For GMWBs, the benefit base balance is the declining benefit base amount.

¹⁸ *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2014*, LIMRA Secure Retirement Institute, 2015.

GMWB Owner and Contract Characteristics

Table 2-1 provides a summary of GMWB owner and contract characteristics at EOY 2014.

Table 2-1: GMWB Owner and Contract Characteristics	
	All Contracts In Force
Age of owner	
Age 59 and under	16%
60 to 64	13%
65 to 69	18%
70 to 74	19%
75 to 79	15%
80 or older	19%
Average Age	70
Gender	
Male	48%
Female	52%
Market type	
IRA	60%
Nonqualified	40%
Distribution channel	
Career agent	30%
Independent agent/independent B-D	38%
Full-service National B-D	16%
Bank	16%
Cost structure	
A-share	3%
B-share	61%
C-share/no load	3%
L-share	29%
O-share	4%
Contract value, EOY 2014 as percent of contracts issued	
Under \$25,000	16%
\$25,000 to \$49,999	19%
\$50,000 to \$99,999	26%
\$100,000 to \$249,999	28%
\$250,000 to \$499,999	8%
\$500,000 or higher	2%

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

	All Contracts In Force
Contract value, EOY 2014 as percent of contract value	
Under \$25,000	2%
\$25,000 to \$49,999	6%
\$50,000 to \$99,999	16%
\$100,000 to \$249,999	37%
\$250,000 to \$499,999	24%
\$500,000 or higher	15%
Average contract value, EOY 2014	\$118,716
Median contract value, EOY 2014	\$75,569
Note: Percentages are based on number of contracts unless stated otherwise. Based on 193,964 contracts still in force at EOY 2014.	

Key Findings

- Over half (53 percent) of the in-force GMWB owners were aged 70 or older.
- Two thirds of the contracts were issued by career agents or independent agent/independent broker-dealers (B-Ds).
- By EOY 2014, just over half of the in-force contracts with GMWBs had contract values between \$50,000 and \$249,999.
- Although 39 percent of the in-force contracts had values of \$100,000 or more, these contracts constituted 76 percent of GMWB contract values at EOY.

Benefit Base Balance

At beginning-of-year (BOY) 2014, 19 percent of contracts with GMWBs issued before 2014 had benefit base balances that exceeded contract values. Of these contracts, the average difference between the benefit base balance and contract value was approximately \$8,200. On average, contract values were around 107 percent of the benefit base balances (Table 2-2).

Table 2-2: GMWB Benefit Base Balances and Contract Values, at BOY 2014

	Benefit Base Balance Amount	Contract Value	
		Amount	Percent of Benefit Base Balance
Sum	\$20,907,667,952	\$22,450,250,699	107%
Average	\$110,915	\$119,098	107%
Median	\$69,620	\$76,027	109%
Percent of contracts where benefit base balance > contract value			19%
Note: Based on 188,502 contracts issued before 2014. Excludes contracts for which the GMWB benefit base balances could not be determined or did not have EOY benefit base balance amounts.			

Less than 3 in 10 (29%)
of contracts had benefit base
balances that exceeded
contract values at EOY 2014.

In 2014, the S&P 500 index grew 14 percent, including dividends. However, given that almost half of the contract owners took withdrawals, the average contract value decreased while the average benefit base balance rose slightly. As a result, less than a third (29 percent) of the GMWB contracts had a benefit base balance amount greater than the contract value at EOY 2014 (Table 2-3). On average, contract values

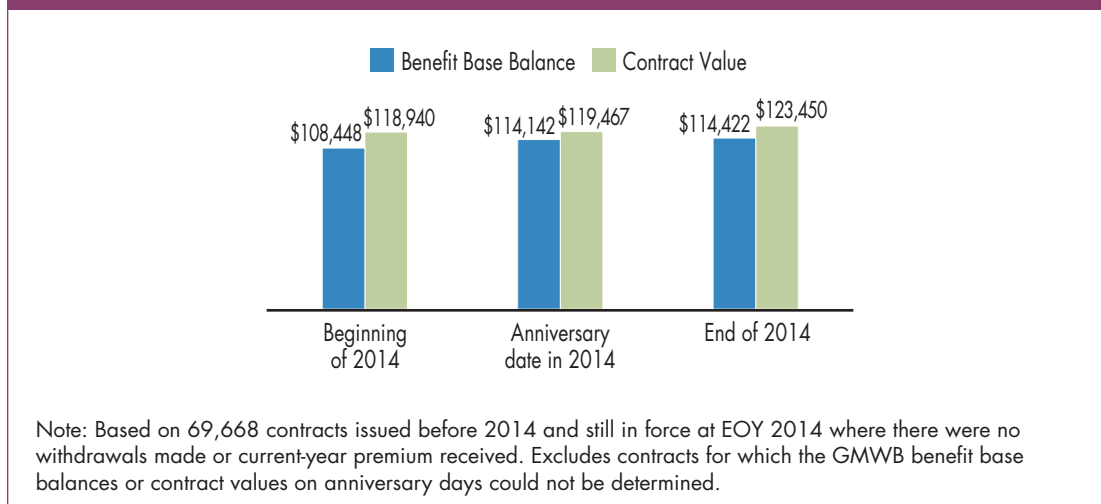
were around 106 percent of the benefit base balances, a slight decrease from BOY. At EOY 2014, the average benefit base balance and contract value stood at \$111,700 and \$118,600 respectively for all GMWB contracts.

Table 2-3: GMWB Benefit Base Balances and Contract Values, at EOY 2014

	Benefit Base Balance Amount	Contract Value	
		Amount	Percent of Benefit Base Balance
Sum	\$21,056,524,641	\$22,347,805,863	106%
Average	\$111,705	\$118,555	106%
Median	\$69,560	\$75,400	108%
Percent of contracts where benefit base balance > contract value			29%
Note: Based on 188,502 contracts issued before 2014. Excludes contracts for which the GMWB benefit base balances could not be determined or did not have EOY benefit base balance amounts.			

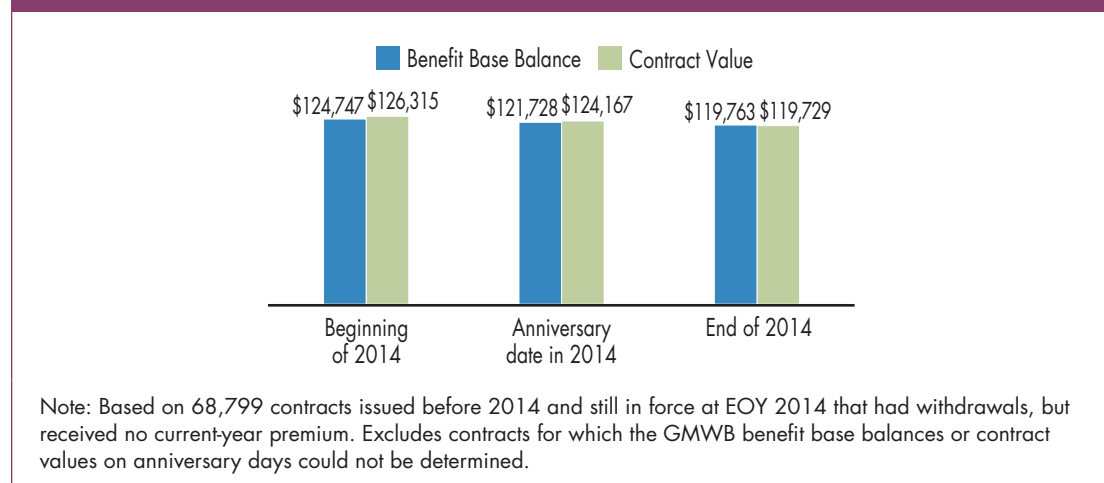
Benefit Base Balance for Contracts With Withdrawals vs. Without Withdrawals

For in-force contracts issued before 2014 that did not have withdrawals in 2014, the average benefit base balance rose slightly from \$108,400 to \$114,400 by EOY, up 5.5 percent (Figure 2-1). Such a small increase in the benefit base balance is primarily because few GMWB riders offered an automatic increase of benefit base balances in case of non-withdrawals. The contract values, given the gains in the equity market and fixed-income funds in 2014, grew 4 percent by EOY.

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

For GMWB contracts that incurred withdrawals in 2014, the average benefit base balance dropped 4 percent from \$124,800 at BOY to \$119,800 at EOY. The market gains were not enough to offset the amount withdrawn, on average leading to a decrease in the contract value. The average contract value decreased 5 percent during the year, making the benefit base equal with the contract value (Figure 2-2).

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



Benefit Base Balance to Contract Value Ratios by Age

This analysis of benefit base to contract value (BB/CV) ratios drills down on age or age cohorts to see if a link exists between withdrawal risks and BB/CV ratios.

Figure 2-3 shows the BB/CV ratios by age at BOY. Four in ten in-force contracts issued before 2014 had BB/CV ratios below 90 percent at BOY; 42 percent had ratios between 90 and less than 100 percent; 8 percent had BB/CV ratios between 100 and less than 110 percent; and 6 percent of contracts had BB/CV ratios of 110 to less than 125 percent. Only 5 percent of the contracts had BB/CV ratios of 125 percent or more.

Figure 2-3: GMWB Benefit Base Balance to Contract Value Ratios by Age — at BOY 2014

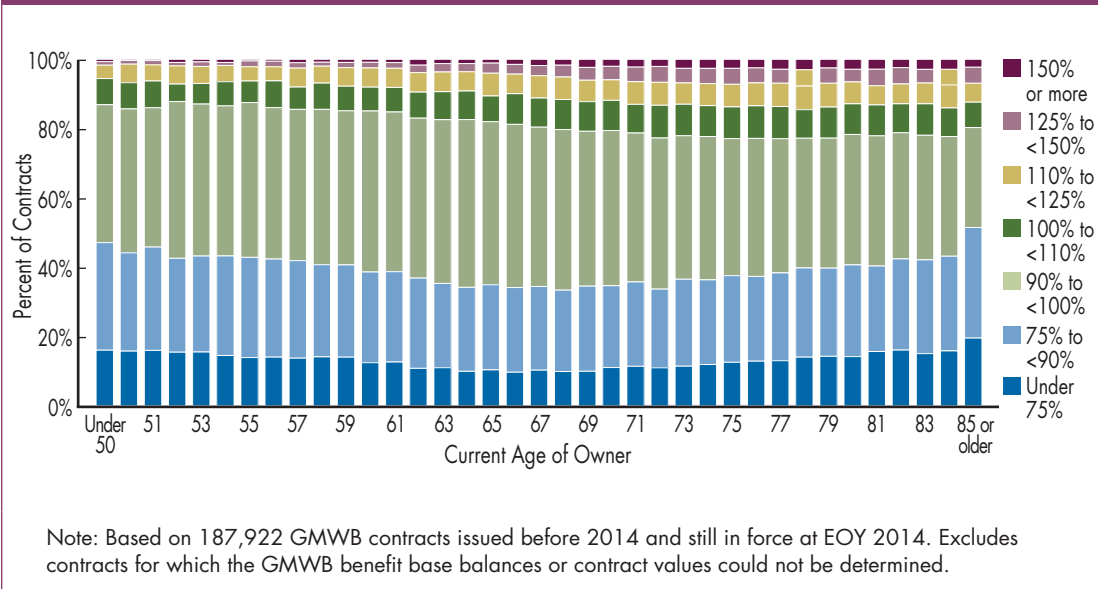
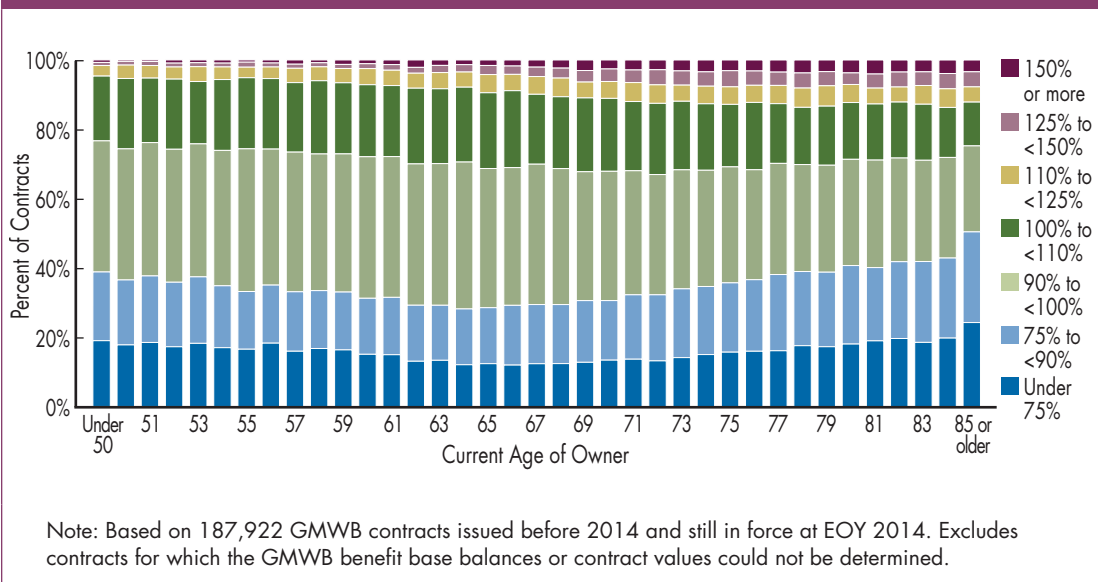


Figure 2-4 shows the distribution of BB/CV ratios by age at EOY 2014. The percentage of contracts with BB/CV ratios less than 100 percent decreased from 81 percent at BOY to 71 percent at EOY.

The percentage of contracts with BB/CV ratios less than 100% decreased from 81% at BOY to 71% at EOY.

Figure 2-4: GMWB Benefit Base Balance to Contract Value Ratios by Age — at EOY 2014

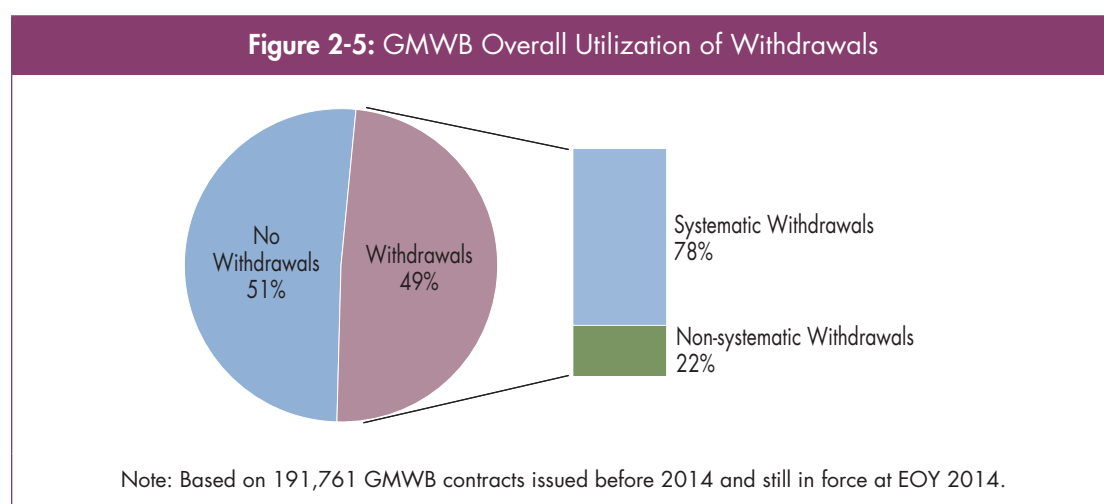


Withdrawal Activity

Overall Utilization for Contracts Issued Before 2014

49% of GMWB contracts had at least some withdrawal activity during 2014.

Forty-nine percent of contracts with GMWB riders issued before 2014 and still in force at EOY had at least some withdrawal activity during 2014 (Figure 2-5). Seventy-eight percent of these contracts had systematic withdrawals.



Based on 94,596 GMWB contracts issued before 2014 and remaining in force at EOY 2014, with withdrawals in 2014:

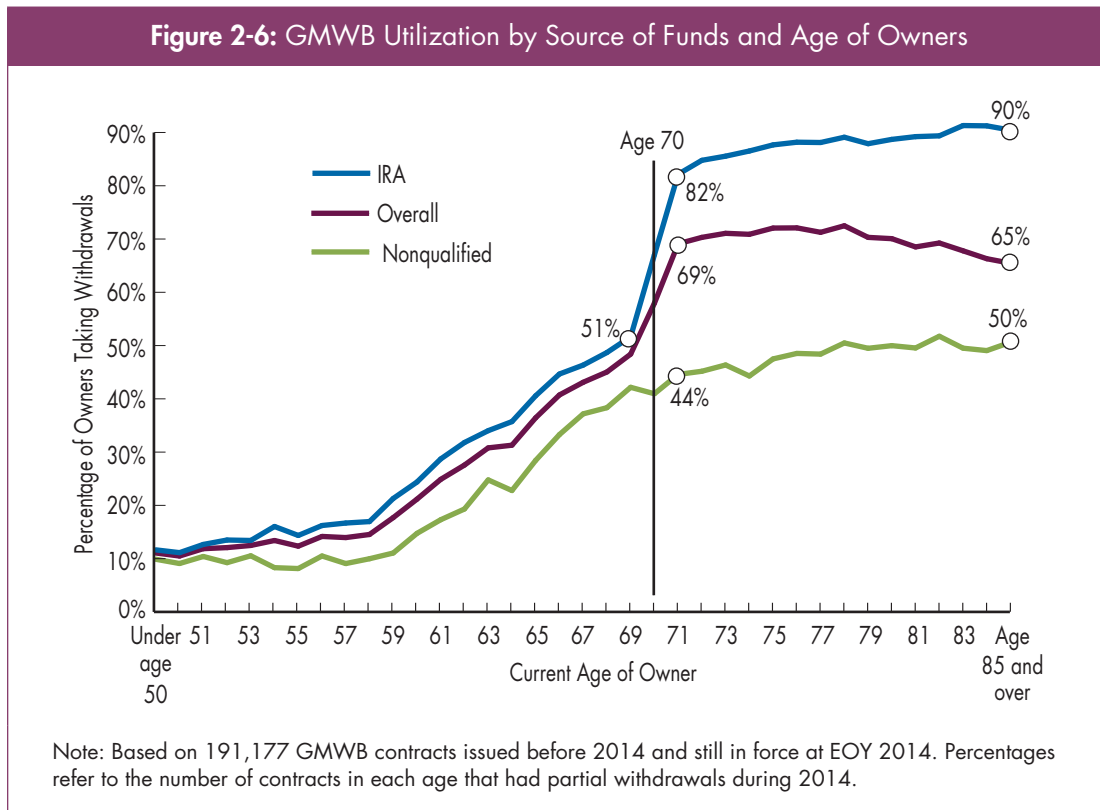
- Total withdrawals amounted to nearly \$1.0 billion.
- The median withdrawal amount was \$6,100 or around 7.5 percent of the median contract value of \$81,800 at BOY. The average withdrawal amount was \$11,000 or 8.8 percent based on the average BOY contract value of \$124,900.
- The median systematic withdrawal amount was \$4,000. The mean was \$6,800.

For the constant group of 13 companies that provided data for this study, overall utilization rates rose in 2014 for contracts that were in force for an entire year. The overall utilization rate among all GMWB owners with contracts sold before 2012 and who took withdrawals in 2012 was 44 percent. The overall utilization rate among all GMWB owners with contracts sold before 2013 and who took withdrawals in 2013 was 47 percent; and the overall utilization rate among all GMWB owners with contracts sold before 2014 and who took withdrawals in 2014 was 49 percent.

Withdrawal Activity by Source of Funds

The analysis of withdrawals by GMWB owners based on 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 for GMWB contracts was 49 percent in 2014. Examining withdrawal activity by source of funds and owner age shows that the 2014 GMWB utilization rate was in fact quite high for certain customer segments (Figure 2-6).

Close to **90%** of GMWB owners aged 75 and older took withdrawals from annuities purchased with qualified money.



Withdrawal rates for customers under age 70 who used either qualified or nonqualified money to buy their contracts mostly remained under 50 percent. After age 70, the need for required minimum distributions (RMDs) from qualified GMWB annuities forced owners to take withdrawals and the withdrawal rate quickly jumped to 82 percent by age 71. The percent of these customers withdrawing then slowly rose to 90 percent by age 85.

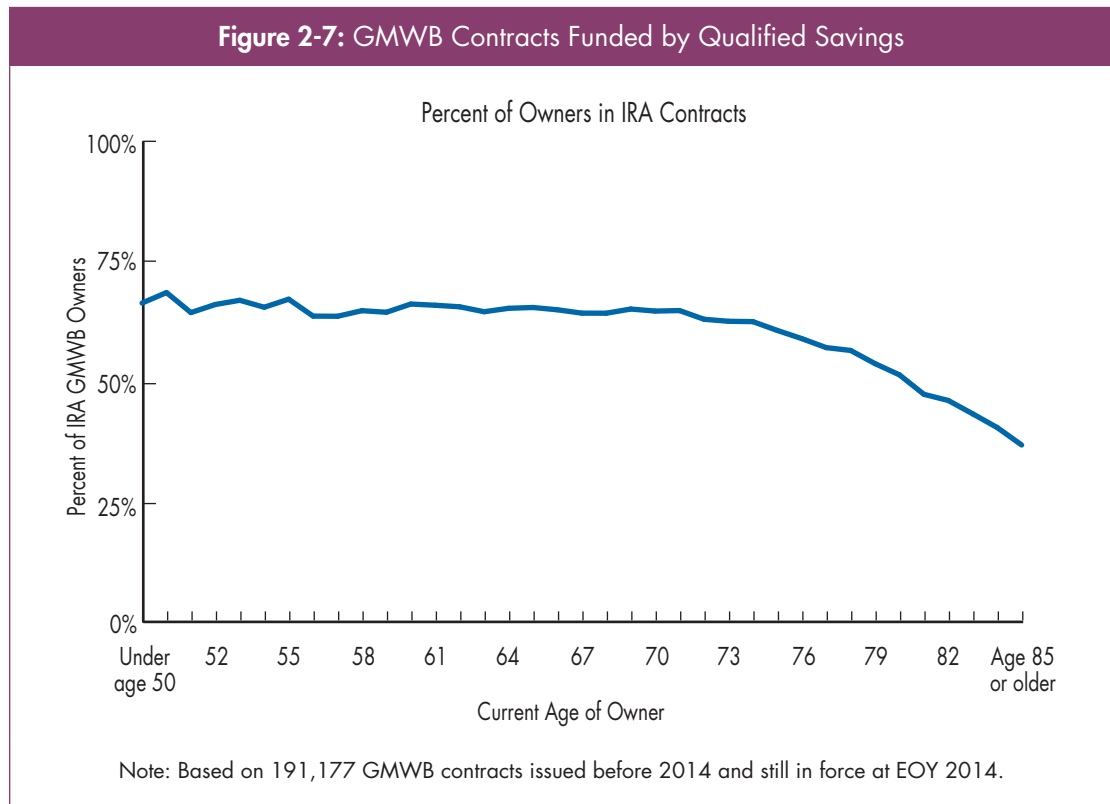
GMWB owners are less likely to take withdrawals if they used nonqualified money to purchase their VA. Nonetheless, there is a steady increase in the proportion of owners who take withdrawals as they age. Half of the customers aged 85 and older took withdrawals.

60% of all GMWB contracts were qualified by EOY 2014.

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

By EOY 2014, 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).

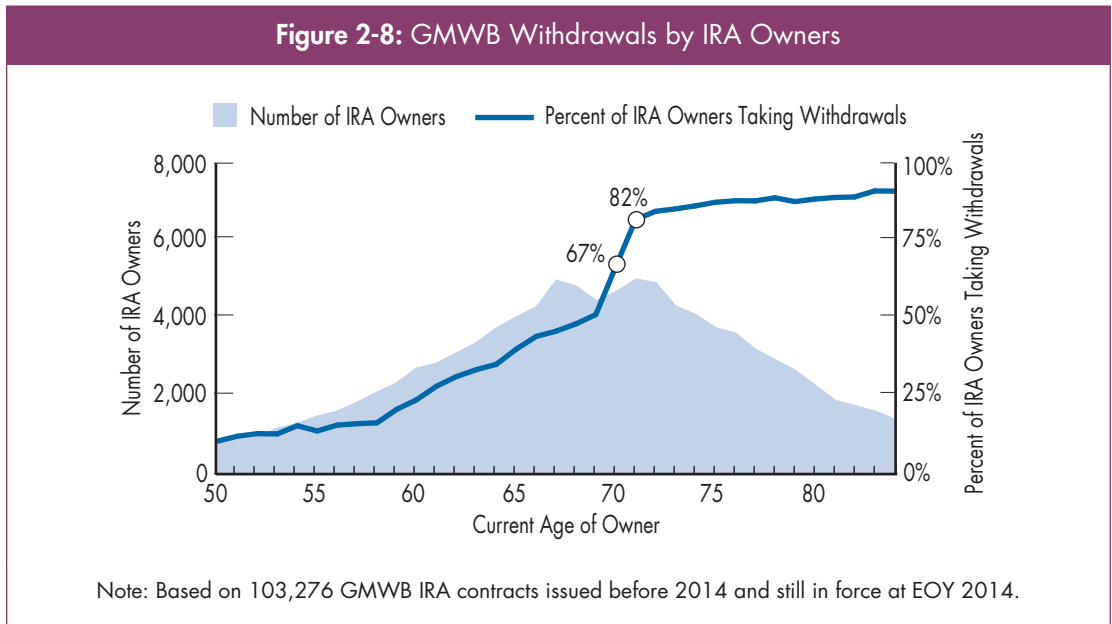
Figure 2-7: GMWB Contracts Funded by Qualified Savings



This reflects broader industry developments, with annuities increasingly being funded with qualified money — by younger owners using rollovers from retirement plans. Two thirds (66 percent) of owners aged 70 or younger funded their GMWB annuities with qualified money. At EOY 2014, just over half of the GMWB owners over age 70 funded their contracts with qualified money. Over half (56 percent) of all nonqualified GMWB owners were over age 70.

There are two distinct stages for IRA owner withdrawal patterns — before age 70 and after age 70 (Figure 2-8). While the percent of IRA owners aged 50 taking withdrawals was only 11 percent, that number increases to 51 percent by age 69. The need to take RMDs drives the percent of owners taking withdrawals at ages 70 and 71, hitting 67 percent and 82 percent respectively. After that, the percent of owners taking withdrawals increased slowly to 90 percent by age 85.

Need to take RMDs drives the percent of owners taking withdrawals at ages 70 and 71 to **67%** and **82%** respectively.

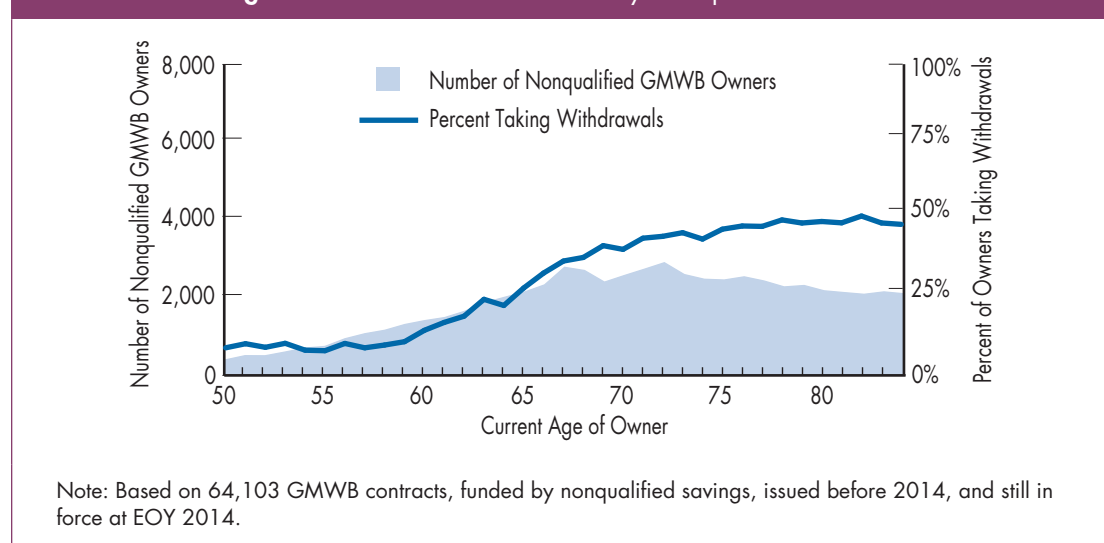


The need to take RMDs from qualified GMWB contracts will continue to drive withdrawal behavior for these contract owners in the next few years. At EOY 2014, 34 percent of qualified GMWB owners were between ages 60 and 69. Many of these GMWB owners will be forced to take withdrawals in the next few years; and, as new sales in GMWB riders will likely remain very low, the overall utilization rate will increase in the absence of new contracts.

56% of nonqualified GMWB owners were over age 70 in 2014.

In contrast to the 44 percent of IRA GMWB owners over age 70, 56 percent of nonqualified GMWB annuity owners were over age 70. Forty-eight percent of nonqualified owners took withdrawals in this age group, significantly less than the 7 out of 8 owners withdrawing from their qualified annuity (Figure 2-9). Three in ten nonqualified GMWB owners were aged 60–69 and just under one third of these owners took withdrawals during the year.

Figure 2-9: GMWB Withdrawals by Nonqualified Owners



Taking First Withdrawals

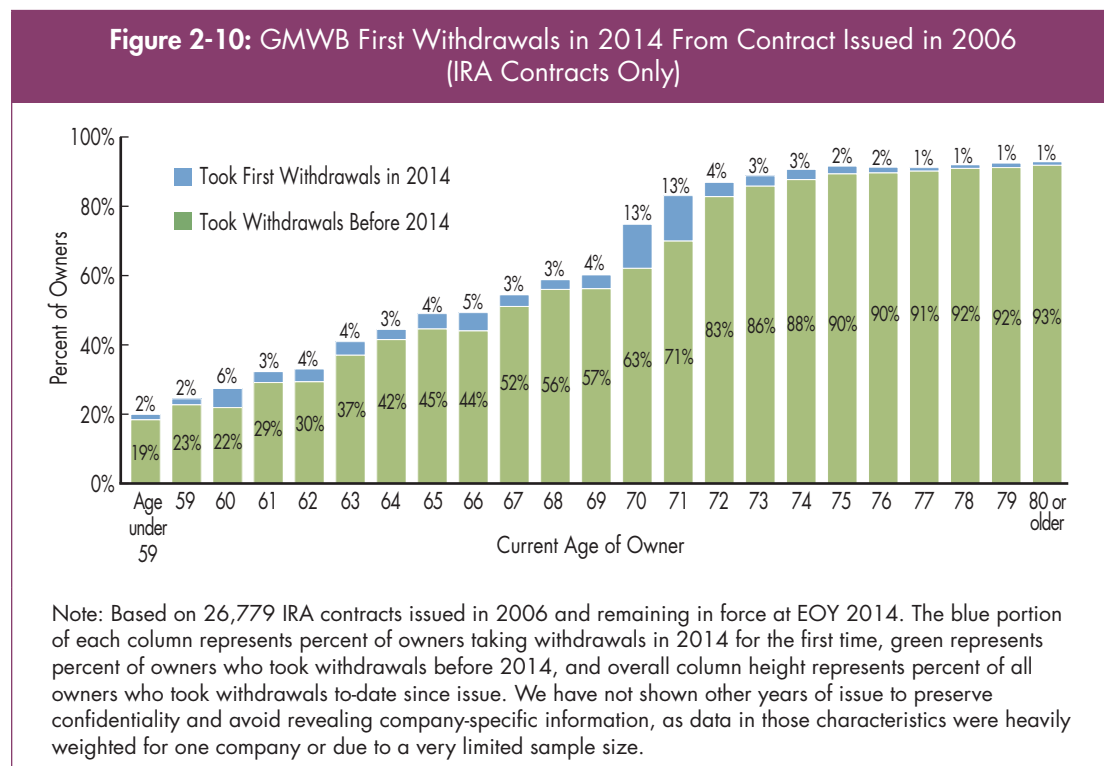
To better understand owners' inclinations to take withdrawals, we analyzed owner withdrawal behavior by considering at what age or in what year of the annuity ownership the owner is likely to initiate their first withdrawal. Also, once they start taking withdrawals, how many will continue taking withdrawals? Based on that analysis, we might expect to find corollary relationships among other variables like when owners decide to take their first withdrawals, whether their withdrawal amounts remain within or around the prescribed withdrawal maximum amount allowed in the contract, or whether the persistency of these contracts is different from contracts that have not experienced withdrawals or experienced excess withdrawals.

Analysis of when owners are likely to take first withdrawals provides important information about withdrawal risk. These findings can help insurance companies to assess risks more precisely by identifying clusters of owners who are likely to start withdrawals in their first year, second year, etc., after purchase. There are two ways to analyze withdrawal activity: First, we can determine the percentage of owners who have initiated their first withdrawals in the current year (2014 for this report), by their age and source of money, to provide various

trends and relationships. Second, we can analyze the first withdrawal history for owners from a particular issue year, and track how age and source of money influence their first withdrawal activities.

Taking First Withdrawal From IRA Annuity in 2014

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 2014 for GMWB contracts issued in 2006.¹⁹



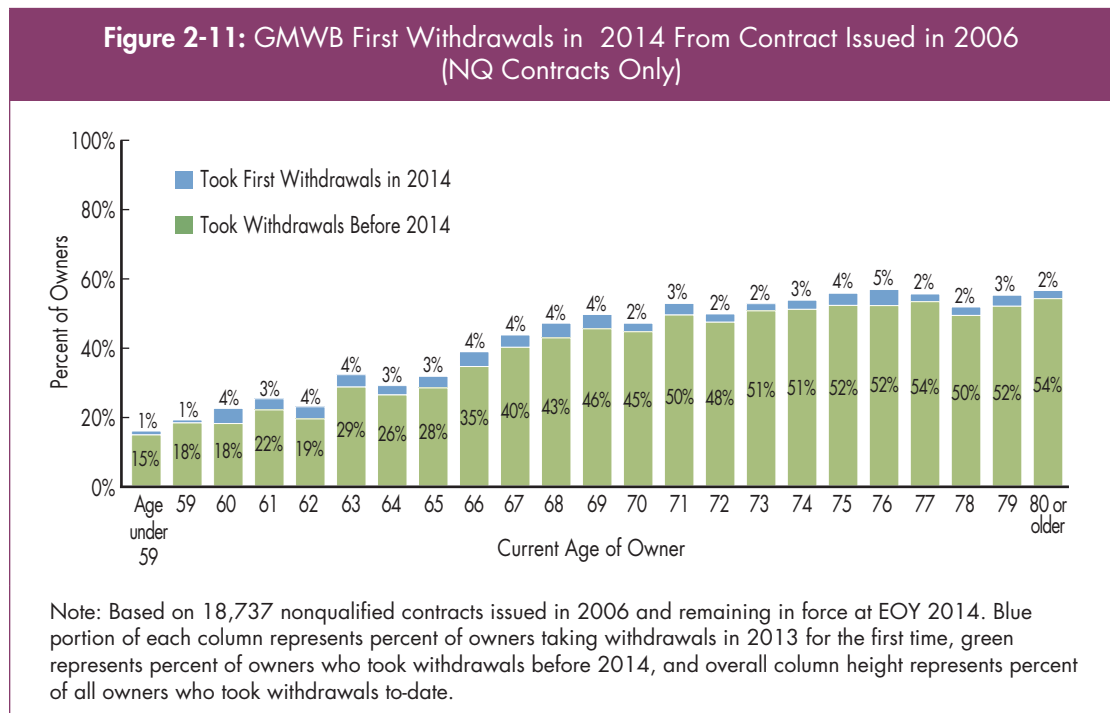
This analysis — based on owners who bought their GMWB annuities in 2006 — gives us a much clearer picture of IRA owner withdrawal behavior. Owners who bought their annuities in 2006 had seven to eight years to take withdrawals. The marginal increases in the percentage of owners taking their first withdrawals 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 2014, 13 percent of owners that turned age 70 and 71 took their first withdrawals. After age 71, the percent of owners taking their first withdrawals drops quickly to 4 percent at age 72 and then settles around 1 percent for owners aged 77 and older.

¹⁹ Due to constraints with sample sizes for contracts issued in years 2007 to 2013 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.

Taking First Withdrawal From Nonqualified Annuity in 2014

The percent of nonqualified annuity owners who took their first withdrawals in 2014 reflects more streamlined behavior. Figure 2-11 shows the percent of these owners, for contracts issued in 2006.²⁰



Because there were no RMDs, the percent of nonqualified owners taking their first withdrawals remained within a tight range — 1 percent to 5 percent — irrespective of age.

First 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. We looked at withdrawal behavior of

²⁰ Due to constraints with sample sizes for contracts issued in years 2007 to 2013 in each individual age, the analysis represents contracts issued in 2006.

2007 buyers aged 57 to 75 during 2007 to 2014 (8 years of withdrawal history), and assessed what percent of those buyers began taking their first withdrawals from 2007 to 2014 (Table 2-4). We are unable to separate the data by source of funds (IRA vs. nonqualified) due to the limited sample sizes.

		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	All Ages			
Age 57		16%																						
Age 58		4%	14%																					
Age 59		5%	7%	20%																				
Age 60		10%	8%	14%	27%																			
Age 61		6%	6%	7%	9%	26%																		
Age 62		4%	6%	5%	8%	13%	31%																	
Age 63		2%	5%	4%	5%	5%	12%	33%																
Age 64		3%	2%	5%	3%	4%	7%	8%	30%															
Age 65			4%	5%	5%	3%	5%	7%	14%	35%														
Age 66				3%	4%	4%	5%	6%	8%	12%	35%													
Age 67					2%	3%	4%	4%	5%	5%	10%	30%												
Age 68						3%	2%	4%	4%	5%	7%	13%	29%											
Age 69							2%	3%	4%	4%	6%	6%	11%	35%										
Age 70								6%	8%	9%	9%	13%	9%	22%	41%									
Age 71									7%	6%	9%	9%	18%	6%	25%	44%								
Age 72										2%	3%	4%	3%	10%	4%	23%	39%							
Age 73														1%	3%	2%	2%	3%	4%	22%	44%			
Age 74															1%	2%	3%	3%	3%	6%	15%	47%		
Age 75																2%	2%	2%	2%	5%	4%	16%	53%	30%
Age 76																	2%	2%	2%	2%	5%	6%	15%	12%
Age 77																		1%	1%	3%	2%	4%	4%	5%
Age 78																			1%	2%	2%	3%	2%	5%
Age 79																				1%	2%	2%	3%	3%
Age 80																					1%	2%	2%	4%
Age 81																						1%	2%	3%
Age 82																							0%	2%
Cumulative		49%	52%	63%	63%	61%	68%	71%	79%	78%	80%	79%	77%	81%	81%	81%	80%	75%	80%	80%	65%			
Percent of owners taking withdrawals in all subsequent years		71%	66%	66%	76%	76%	72%	75%	80%	83%	81%	82%	84%	84%	83%	82%	77%	76%	77%	75%	77%			

Note: Based on a constant group of 7,262 contracts issued in 2007 and still in force at EOY 2014. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred between 2007 and 2014, with withdrawals continuing every year through 2014.

*All-ages analysis includes all ages reported, including ages not shown in the chart.

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 2014 and with withdrawals continuing every year through 2014.

For example, 84 percent of 68-year-olds who purchased their annuities in 2007 and took their first withdrawals between 2007 and 2014 continued to take withdrawals every year through 2014. 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.

This analysis reveals some important insights:

- Overall, 3 in 10 owners initiated their withdrawals immediately in 2007, the same year they purchased their annuities. There is a discernible jump in first withdrawals both at purchase age and at the attained age of 60.
- The percentages of owners taking their first withdrawals in subsequent years are typically lower than in the first year, as the number of owners who have not taken withdrawals diminishes.
- Overall, once owners initiate withdrawals, 3 out of 4 continue to take withdrawals in all subsequent years.
- More than 75 percent of 2007 owners aged 65 or over took withdrawals from their GMWB annuities in the last seven years. Across all ages, almost two thirds have used the guaranteed benefit rider in their contracts.

Systematic Withdrawal Activity

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 SWPs to those who took random or occasional withdrawals. Insurance companies allow GMWB owners to use SWPs to make withdrawals of the guaranteed withdrawal amount. Withdrawals through SWPs can be viewed as customers' intentions to take withdrawals on a continuous basis, and are a strong indication that the customers are utilizing the GMWB.

Overall, 78 percent of GMWB owners who took withdrawals used an SWP. Just over three quarters 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 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; 90 percent of nonqualified owners aged 85 or older used SWPs.

Figure 2-12: GMWB Owners Taking Withdrawals With SWPs

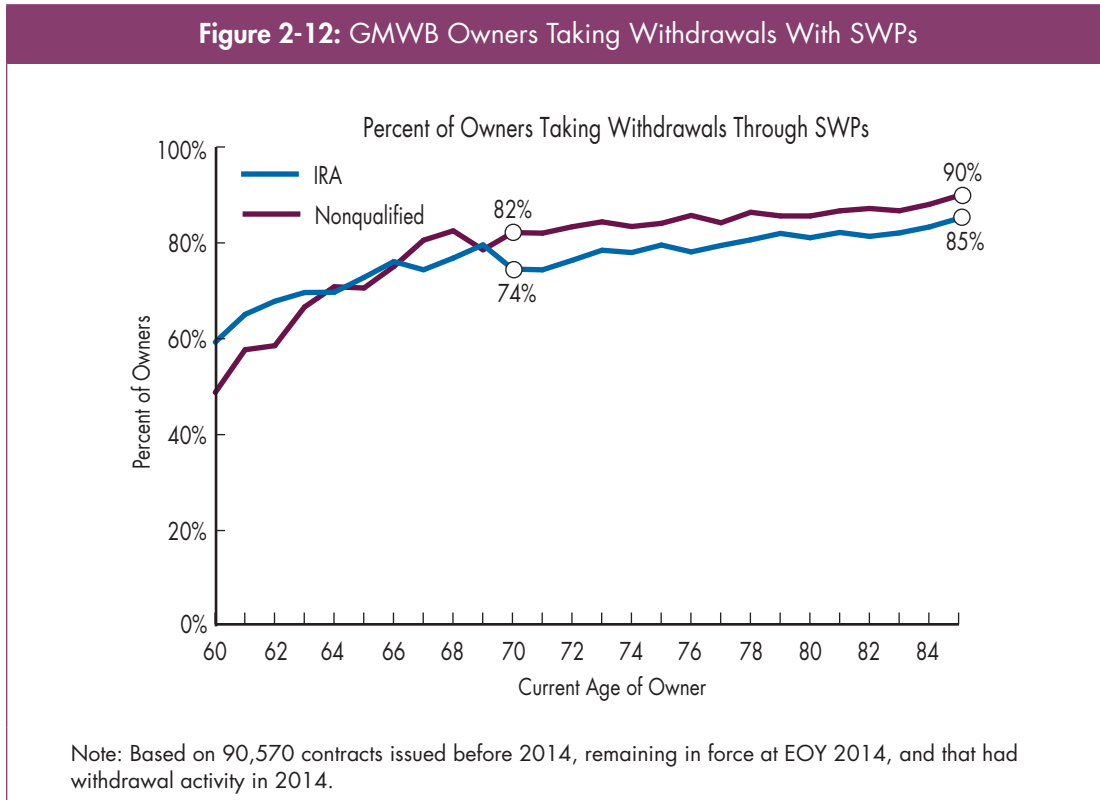


Table 2-5 shows the median withdrawal amount for occasional and SWP withdrawals for both qualified and nonqualified contracts. Some GMWB riders offer the owner the ability to select which withdrawal rate they want, allowing owners to choose between a lower payout and a longer duration vs. a higher payout with a shorter duration. Though the median withdrawal amount should vary by the benefit base balance 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 2-5: 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	\$10,684	\$11,000	\$6,649	\$7,414
60–69	\$9,612	\$8,059	\$8,496	\$6,422
70 or more	\$5,800	\$7,350	\$4,978	\$5,600
Total	\$7,000	\$7,950	\$5,700	\$5,844

Note: Based on 89,634 GMWB contracts issued before 2014 and remaining in force at EOY 2014. 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 2014 totaled \$582.4 million. Contracts with only occasional withdrawals in 2014 totaled \$321.8 million and contracts with both occasional and systematic withdrawals totaled \$121.5 million. Owners aged 70 or over accounted for almost two thirds (62 percent) of the total amount withdrawn in 2014 (Table 2-6). Owners under age 60 were responsible for only 7 percent of the total withdrawal amount. Many of these GMWB owners — particularly those who take occasional withdrawals — may be partially surrendering their contracts.

Table 2-6: GMWB Withdrawal Amounts as Percentage of Total Withdrawal Amount

Age	Only Occasional Withdrawals		Only Systematic Withdrawals		Both Occasional and Systematic Withdrawals		Total
	IRA	Nonqualified	IRA	Nonqualified	IRA	Nonqualified	
Under age 60	3%	2%	1%	0%	1%	0%	7%
Age 60–69	8%	3%	12%	4%	3%	1%	31%
Age 70 or older	10%	5%	25%	14%	5%	2%	62%
Total	21%	10%	38%	19%	9%	3%	100%

Note: Based on 93,187 contracts that were issued before 2014, still in force EOY 2014, and that had withdrawal activity in 2014.

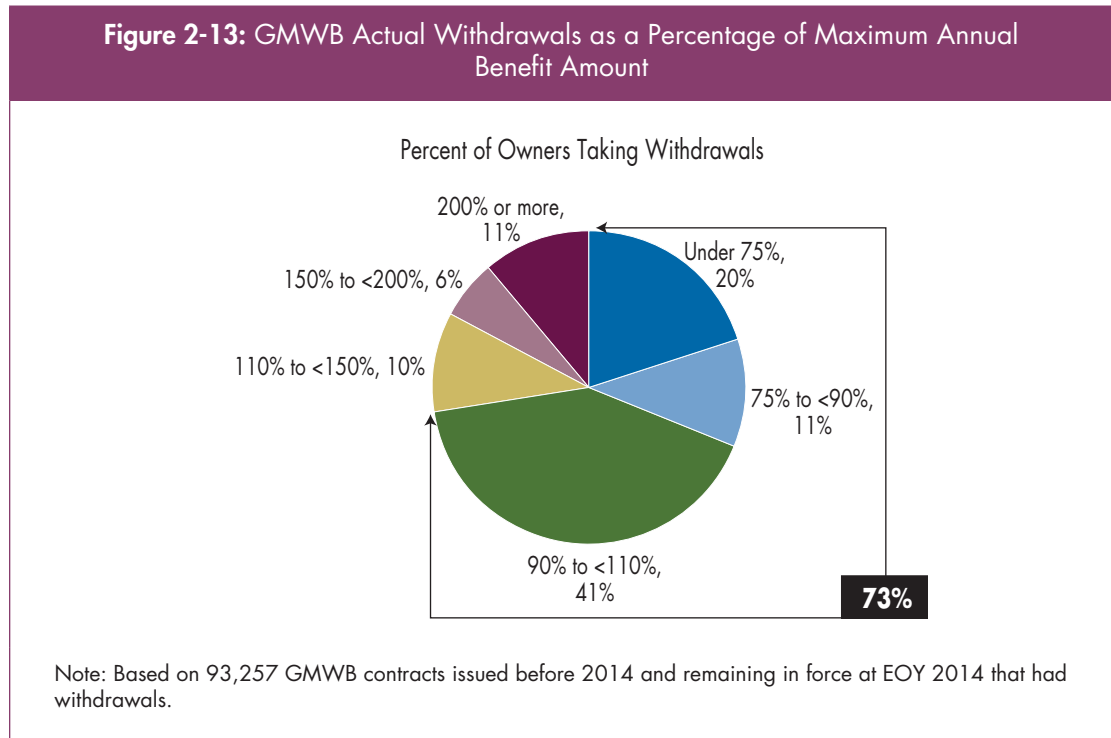
Percentage of Benefit Maximum Withdrawn

GMWB riders provide a specified annual withdrawal amount for a certain period of time, typically at a withdrawal rate of 5 to 7 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 balance and ensuing withdrawal amount for subsequent years.

In this section, we will look at the relationship of customers' actual withdrawal amounts in calendar-year 2014 to the maximum withdrawal amount allowed in the contract. Participating companies were asked to provide this maximum amount as of BOY 2014. If companies did not provide the maximum withdrawal amount but provided the benefit base balance, as well as the maximum percentage of this base that could be withdrawn each year, then we estimated the maximum amount. We calculated the maximum withdrawal amount based on reported maximum annual withdrawal percentage multiplied by average benefit base balance.

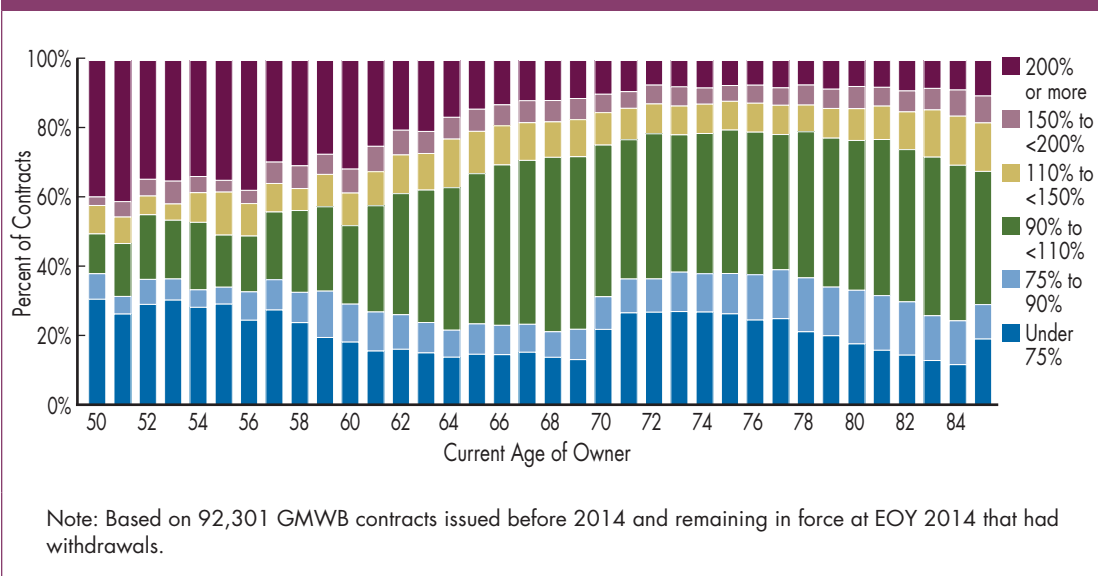
For percentage of benefit maximum withdrawn, we looked at the relationship of customers' actual withdrawal amounts in calendar-year 2014 to the maximum withdrawal amounts allowed in the contracts. Given that our study is done on a calendar-year basis, there is some imprecision in measuring the maximum annual withdrawal amounts because benefit base balances can vary under certain circumstances during the year (e.g., if additional premium is received) and most benefit base balance 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%, 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 three quarters of owners that took withdrawals in 2014 withdrew within 110 percent of the maximum withdrawal amount allowed in the contract. Ten percent of owners withdrew 110 to less than 150 percent of the maximum amount allowed. Some of these older owners may have remained within the withdrawal limits allowed because of higher RMDs. However, 17 percent of owners taking withdrawals exceeded the maximum withdrawal amount by 50 percent or more.

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 110 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 in five owners took less than 75 percent of the maximum withdrawal amount allowed in the contract. Twenty-one percent of owners taking less than 75 percent of their maximum withdrawal amount took withdrawals before age 70. However, 79 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 contract is lowest for owners aged 70 and older — ranging from 5 to 10 percent for each individual age.

There are some salient insights from the above chart:

- The majority of owners taking withdrawals are typically aged 65 or older. There are few instances where these older owners take significantly more than the annual benefit maximum.
- Younger owners, particularly under age 60, are more likely to take 200 percent or more of the benefit maximum allowed in the contract.
- There is a noticeable increase at ages 70 and 71 in the percentage of owners taking withdrawals less than 90 percent of the benefit maximum. This can be explained by the need for IRA owners to take minimum withdrawals under RMDs, which are typically at a lower withdrawal rate. In Appendix C, Figures C2-1 and C2-2, you can see that some owners at age 70 and 71 are taking RMD withdrawals, as a necessity and expediency — at a lower rate based on life expectancy — rather than as a measure of maximizing their withdrawal benefits.

- On the other hand, some IRA owners aged 75 or older are taking withdrawals in the range of 110 to 149 percent of the maximum benefit rate allowed in the contracts (see Appendix C, Figures C2-1 and C2-2). They are apparently using higher RMD withdrawal rates applicable in these older ages, often without jeopardizing their benefit bases in the contract, as most insurance companies allow IRA-owners to adhere to the RMD rules.

Almost two thirds of owners who took withdrawals in 2014 took 75 to 150 percent of the benefit maximum.

Almost two thirds of owners who took withdrawals in 2014 took amounts within 75 to 150 percent of the benefit maximum allowed in their contracts (Table 2-7). Four in 10 GMWB owners under age 60 who took withdrawals exceeded 150 percent or more of the benefit maximum. Some of these younger owners may have intended to partially surrender their contracts as opposed to taking regular withdrawals under the terms of the GMWB benefit.

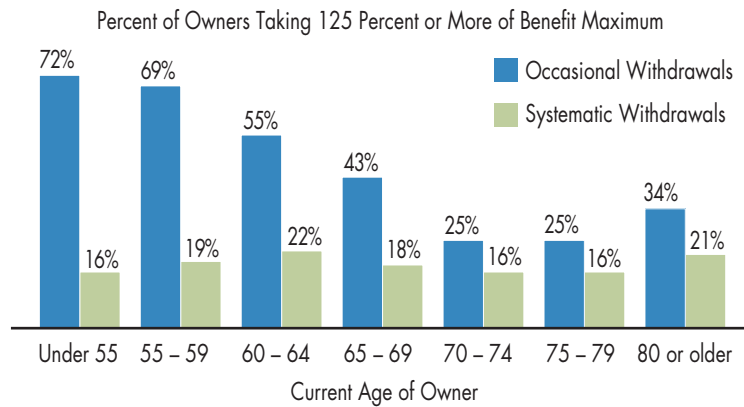
Table 2-7: GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age Groups

Age	Percent Taking Withdrawals to Maximum Annual Benefit Amount					
	Under 75%	75% to <90%	90% to <110%	110% to <150%	150% to <200%	200% or more
Under 60	26%	7%	18%	8%	5%	35%
60-69	15%	9%	44%	11%	6%	15%
70 or more	22%	12%	42%	10%	6%	8%
All ages	20%	11%	41%	10%	6%	11%

Note: Based on 93,083 GMWB contracts issued before 2014 and remaining in force at EOY 2014 that had withdrawals.

On the other hand, 1 in 5 owners between ages 60 and 69 who took withdrawals exceeded 150 percent or more of their benefit maximum. Only 1 in 7 owners (14 percent) aged 70 or older took withdrawals that exceeded 150 percent of the maximum withdrawal amount allowed in 2014. 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 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 93,083 GMWB contracts issued before 2014 and remaining in force at EOY 2014 that had withdrawals.

Overall, just over one third (37 percent) of owners who took occasional withdrawals had excess withdrawals of 125 percent or more of benefit maximum, while just under 1 in 5 (18 percent) of owners with SWP withdrawals had similar excess withdrawals. Moreover, 58 percent of the occasional withdrawals exceeding 110 percent 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 8 percent of the total number of owners taking withdrawals in 2014. This also supports our earlier contention that some 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 this 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.

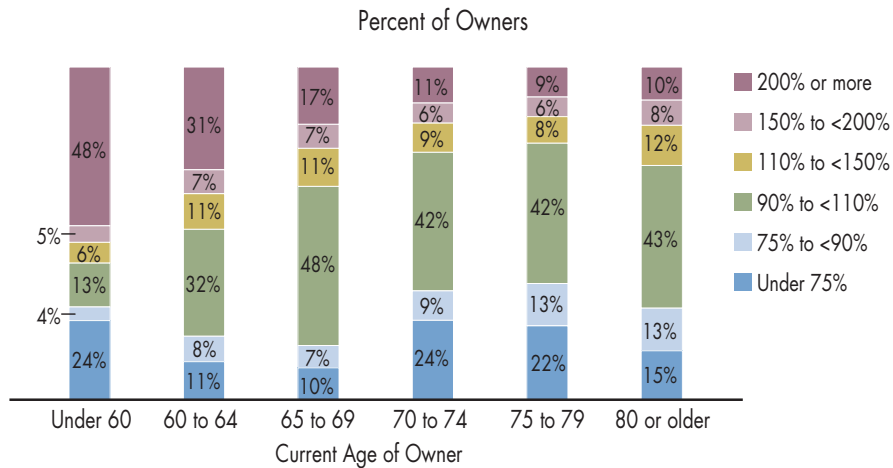
Figures 2-16 and 2-17 illustrate the proportion of owners withdrawing amounts as a percentage of the benefit maximum, by age and contract size. If efficiency is positively associated with contract value, then the proportion taking 90 percent to less than 110 percent of the benefit maximum should rise 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 13 percent of owners with contract sizes under \$100,000 to 18 percent of owners with contracts worth \$100,000 or more.
- However, owners aged 65 or older (who make up 89 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 in line or just slightly below 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 200 percent of the benefit maximum drops 23 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 five percentage points.

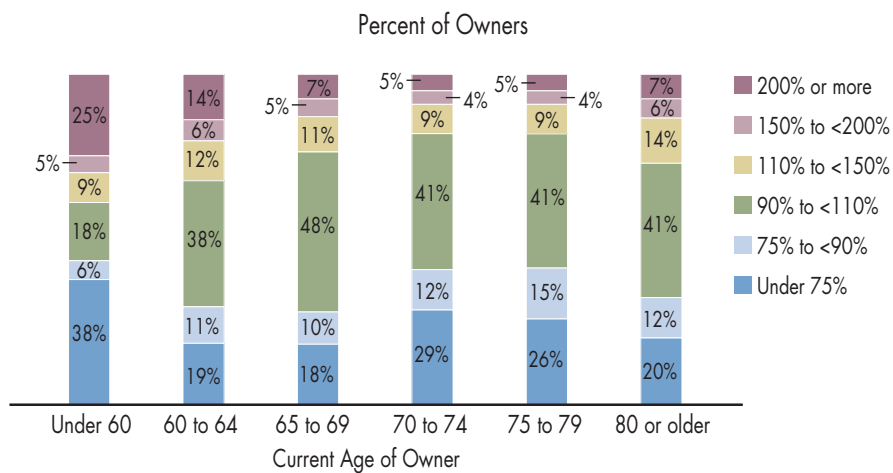
In short, owners of GMWBs with higher contract values not only are less likely than those with lower contract values to exceed the benefit maximum, but also do not avail themselves of the full potential withdrawal amounts the GMWB offers. For both GLWBs and GMWBs, larger contract sizes are associated 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 54,399 GMWB contracts issued before 2014, still in force at EOY 2014, with withdrawals in 2014.

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



Note: Based on 38,684 GMWB contracts issued before 2014, still in force at EOY 2014, with withdrawals in 2014.

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

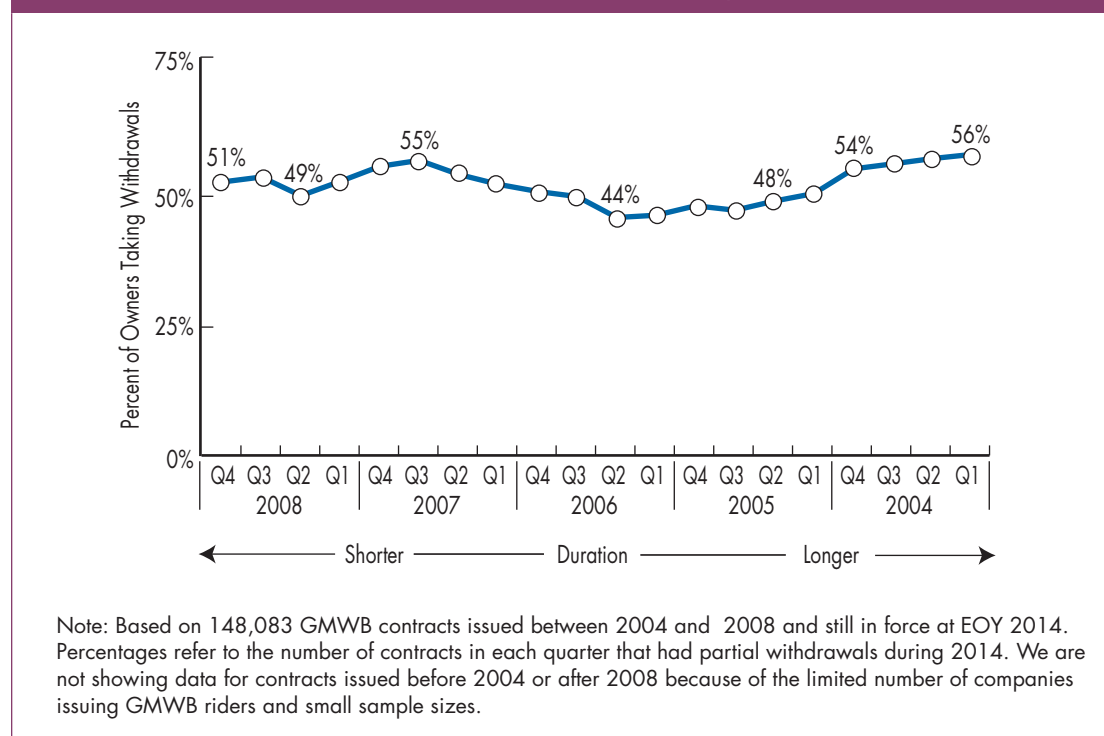
- Overall withdrawal activity, even the composite withdrawal activity by age cohort, is not a reliable measure of actual risk. The measure is skewed downward particularly because the majority of current GMWB owners are under age 70, and most of them have not yet started withdrawals.
- Source of funding (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 ages 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.
- Just over 3 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.

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. 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 GMWB customers might take withdrawals, and the resulting cash flow needed to manage the existing book of business.

Half of the GMWB owners who bought their contracts in 2008 took withdrawals from their annuities in 2014 (Figure 2-18). As the contract duration increases, withdrawal activity remains within a fairly tight range, from a low of 44 percent in early 2006 to a high of 56 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.

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 GMWBs 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 who take 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.

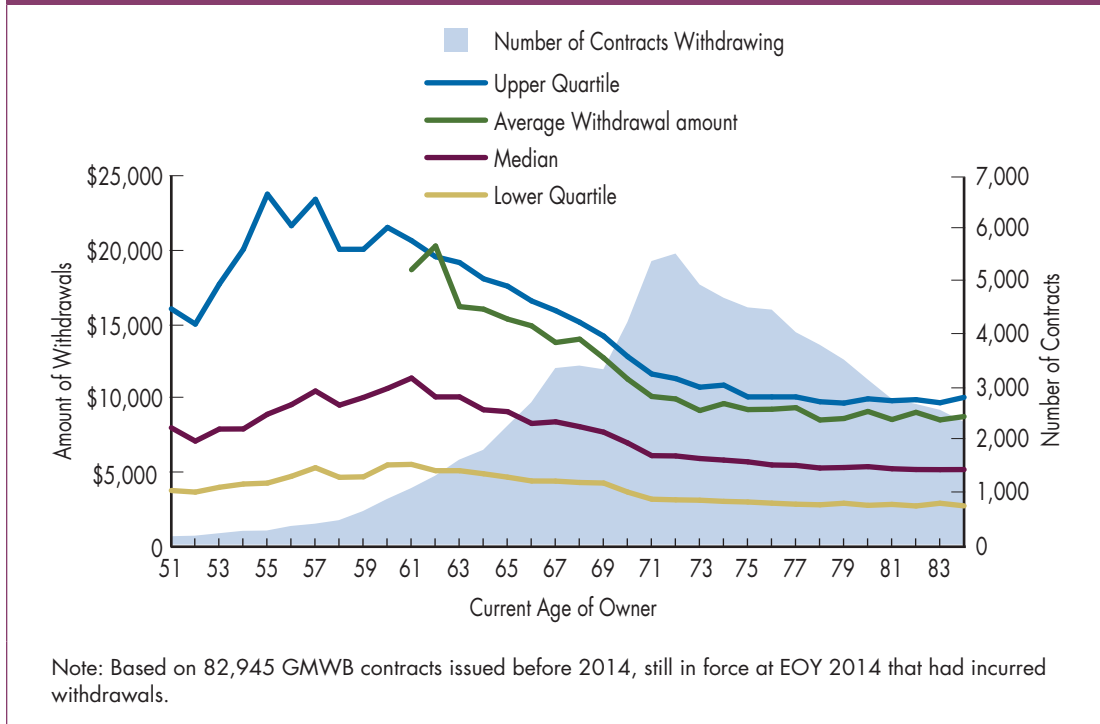
Average Withdrawal Amounts

Median withdrawal amount from GMWB contracts in 2014 = **\$6,100.**

The median amount of withdrawals from GMWB contracts was \$6,100 for contracts issued before 2014 that were in force at EOY 2014. The average amount of withdrawals was \$11,000.

Some owners in their 50s took withdrawals of more than \$20,000 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 61. 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 — 13 to 16 percent — is relatively high for owners under age 60.

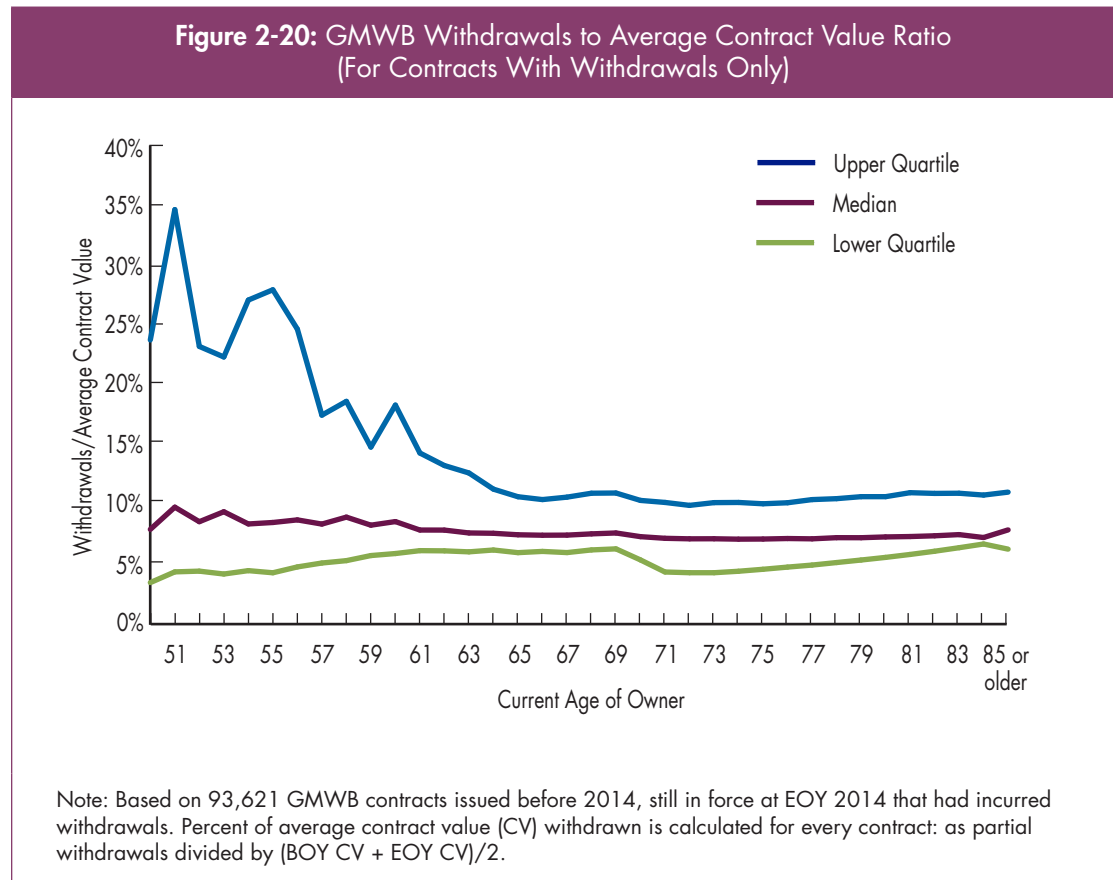
Figure 2-19: GMWB Amount of Withdrawals by Owner's Current Age



After age 60, as the number of GMWB owners increases, a more sustainable withdrawal pattern and average withdrawal amount emerges. Withdrawals by owners aged 60 to 69 are a mix of both occasional and systematic withdrawals. A relatively level trend appears for owners over age 70, with average withdrawal amounts around \$9,000 and median withdrawal amounts from \$5,000 to \$6,000. These withdrawal amounts are commensurate with (or slightly above) the maximum withdrawal amount for this age group.

Withdrawals as a Percentage of Contract Value and Benefit Base Balance

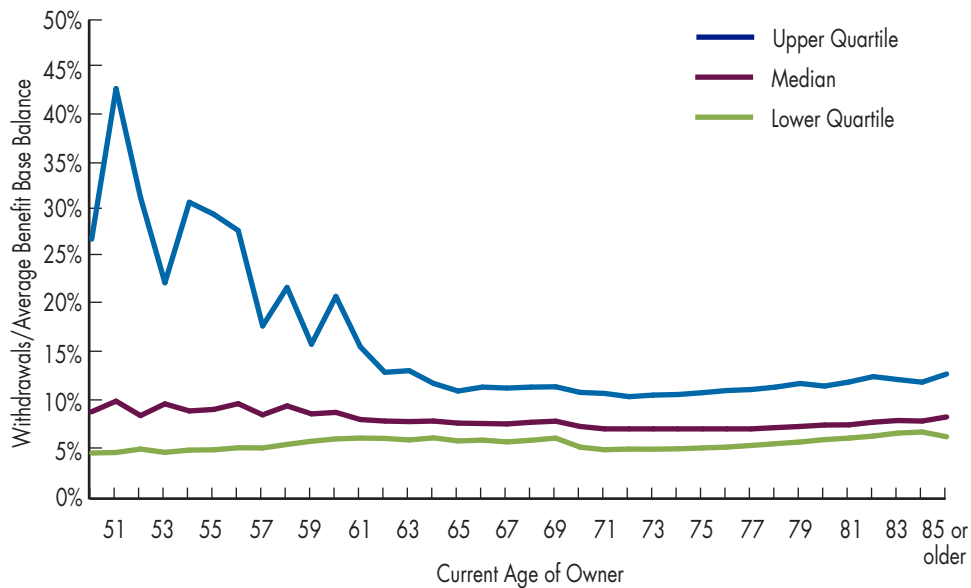
In order to provide some context, we assessed withdrawal amounts in relation to both contract values and benefit base balances. Figure 2-20 shows the median withdrawal amount for all ages and also the quartile distribution of the withdrawal amounts in 2014.



The distribution of the withdrawals as a percent of average contract value withdrawn shows that, for owners aged 65 or over, the upper quartile and lower quartile values are within four percentage points of the median. The pattern also indicates that the majority of older owners taking withdrawals do so at similar ratios to their contract values. For owners under age 60, the median of the ratios remains around 8 to 10 percent. However, there is a much wider dispersion 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.

The distribution of withdrawal amount to the average benefit base balance 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 2-21). The distribution of ratios of withdrawal amount to benefit base balance shows that the upper quartile and lower quartile values are within five percentage points of the median for owners aged 65 or over. This is a similar to what we saw with the withdrawal to average contract value ratio. The ratios also indicate that the majority of owners taking withdrawals do so at a rate of around 7 percent of their benefit base values — a typical GMWB maximum payout rate for this age.

Figure 2-21: GMWB Withdrawals to Average Benefit Base Balance Ratio (For Contracts With Withdrawals Only)

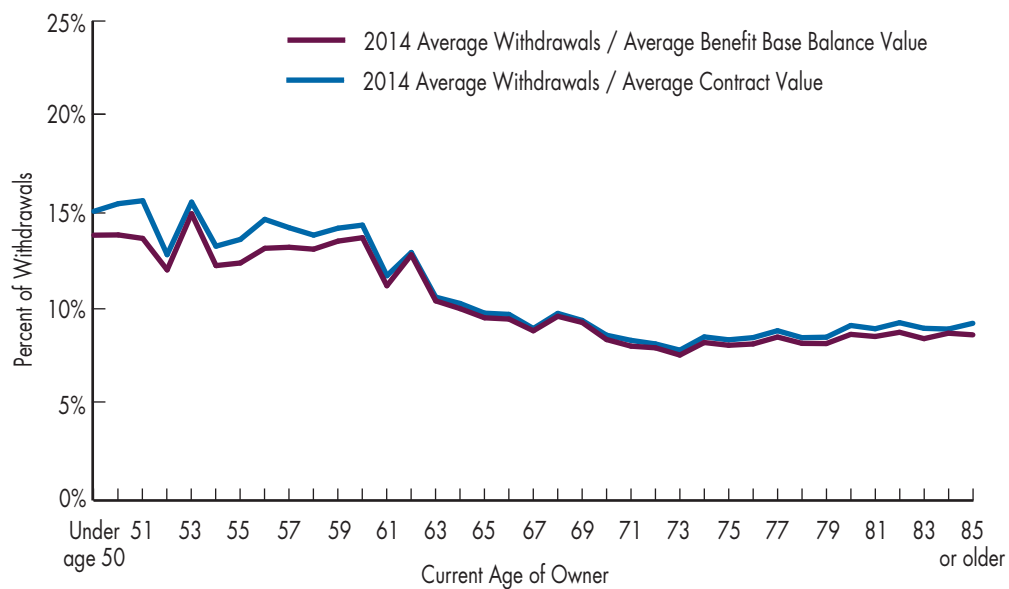


Note: Based on 93,621 GMWB contracts issued before 2014, still in force at EOY 2014 that had incurred withdrawals. Percent of average benefit base balance (BB) withdrawn is calculated for every contract: as partial withdrawals divided by $(BOY\ BB + EOY\ BB)/2$.

Ratio of Withdrawal to Contract Value and Benefit Base Balance

For most GMWB contracts, the ratio of average withdrawal amount to average contract value (average of contract values at BOY and EOY) is slightly higher than the ratio of withdrawal to average benefit base balance value (Figure 2-22). 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 2014.

Figure 2-22: GMWB Withdrawal Amount to Average Contract Value and Benefit Base Balance



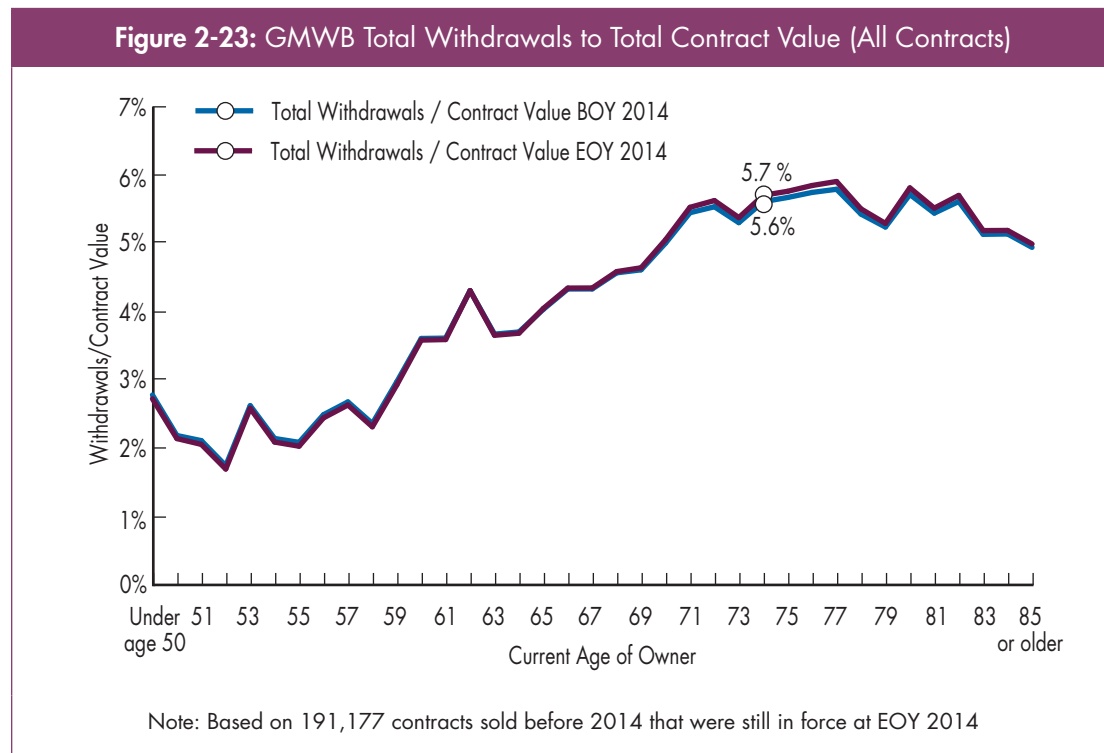
Note: The ratio of withdrawals to average contract values is calculated as the average of withdrawal amounts divided by the average of beginning and ending contract values. The ratio of withdrawals to average benefit base balances is calculated as the average of withdrawal amounts divided by the average of beginning and ending benefit base balances. In both cases, only the 92,804 GMWB contracts that were sold before 2014, were still in force at EOY 2014, had withdrawals in 2014, and with benefit base balance information were considered.

Ratio of Withdrawal Amount to Contract Value

Comparing the ratio of withdrawal amounts to BOY contract values and the ratio of withdrawal amounts to EOY contract values is another measure of GMWB risk originating in customer behavior. 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 2014 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 2014. 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 withdrawal mode.

In 2014, the ratio of total withdrawal amounts to BOY contract values for all contracts in force throughout the year was nearly identical with the corresponding ratio for EOY contract values across all ages (Figure 2-23). Owners took \$1.0 billion in withdrawals from \$22.8 billion at a rate of 4.6 percent, based on the BOY contract values of in-force contracts. Based on EOY contract value, the rate of withdrawals or outflow was the same, 4.6 percent.



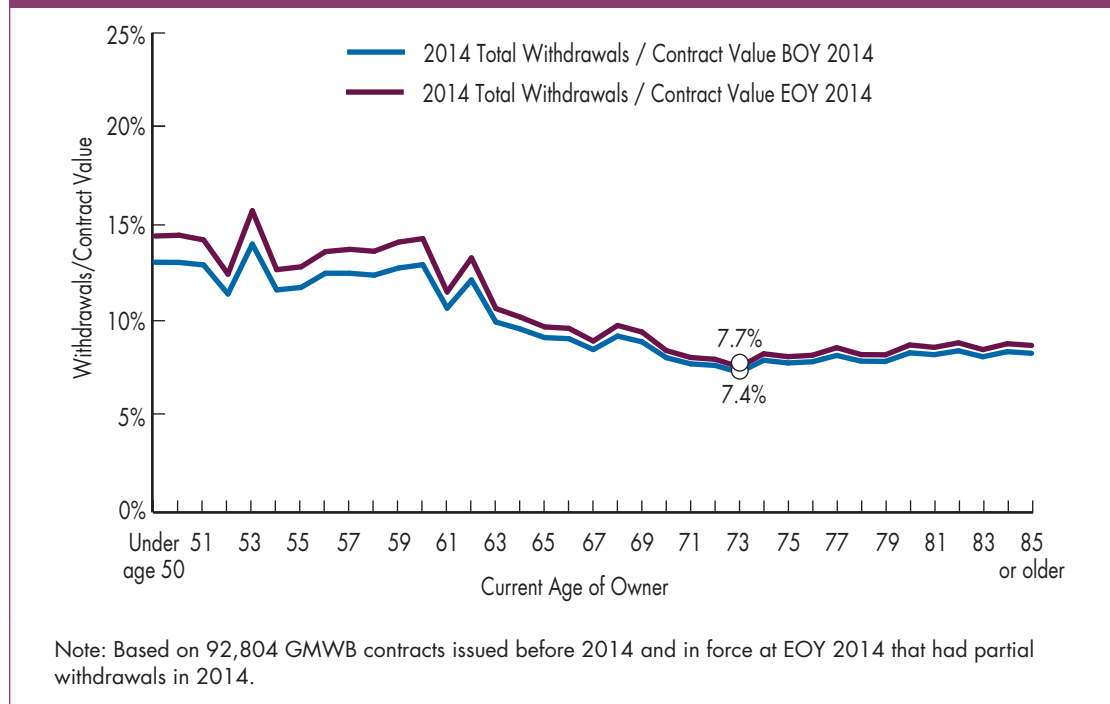
Customers aged 74 held \$797 million in 6,639 GMWB contracts at BOY. The total withdrawal amount taken during 2014 was \$44.6 million. The ratio of total withdrawals to contract values at BOY was 5.6 percent. However, due to investment gains not making up for the amount withdrawn during the year, the total contract value decreased to \$784 million. The ratio of withdrawal amounts to contract values for 74-year-old owners thereby increased from 5.6 percent at BOY to 5.7 percent at EOY.

The ratio of total withdrawals to contract values was nearly identical from BOY to EOY 2014.

Companies can also examine the risks associated with the subset of contracts that had withdrawals in 2014. The equity market and fixed-income fund gains in 2014 were unable to

keep up with the percentage withdrawn, so the ratio of total withdrawals to contract values increased from BOY to EOY for contracts that had withdrawals (Figure 2-24). For example, among owners aged 73 who made withdrawals in 2014, the ratio increased from 7.4 percent of the contract value at BOY to 7.7 percent of the contract value at EOY. Overall for all contracts that had withdrawals in 2014, there was an average 5 percent decline in contract values.

Figure 2-24: GMWB Total Withdrawals to Total Contract Value (for Contracts With Withdrawals Only)



Withdrawal Activity in Contracts Where the Benefit Base Balance Exceeded the Contract Value

A contract where the benefit base balance exceeded the contract value did not experience any noticeable difference in withdrawal behavior.

The 2008–2009 market downturn caused large losses in contract values of annuity contracts, causing most GMWB benefits to have benefit base balances that were higher than the contract values. 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, moderate gains in 2012, strong gains in 2013 followed by minimal gains in 2014. By EOY 2014, 3 in

10 GMWB contracts had benefit base balances greater than the contract values, an increase from BOY when only 1 out of 5 contracts had benefit base balances greater than the account

values. Our findings indicate that GMWB benefit base balances being larger than the contract values was not a major driver in customers' decisions to take withdrawals in 2014.

In order to understand the impact this relationship had on withdrawal activities, it helps to understand the severity and spread of the benefit base balance compared to the contract value among owners by age and by duration of contracts. We should also consider other factors, like market performance, investor confidence, market volatility, the state of the economy, and confidence in the financial strength of financial service providers. *In order to conclude that the benefit base balance being greater than the contract value influenced the owners' withdrawal activity, we would expect to see increased withdrawal activity irrespective of age when the contracts benefit base balance exceeded the contract value.*²¹

For GMWB contracts issued before 2014, it is evident that:

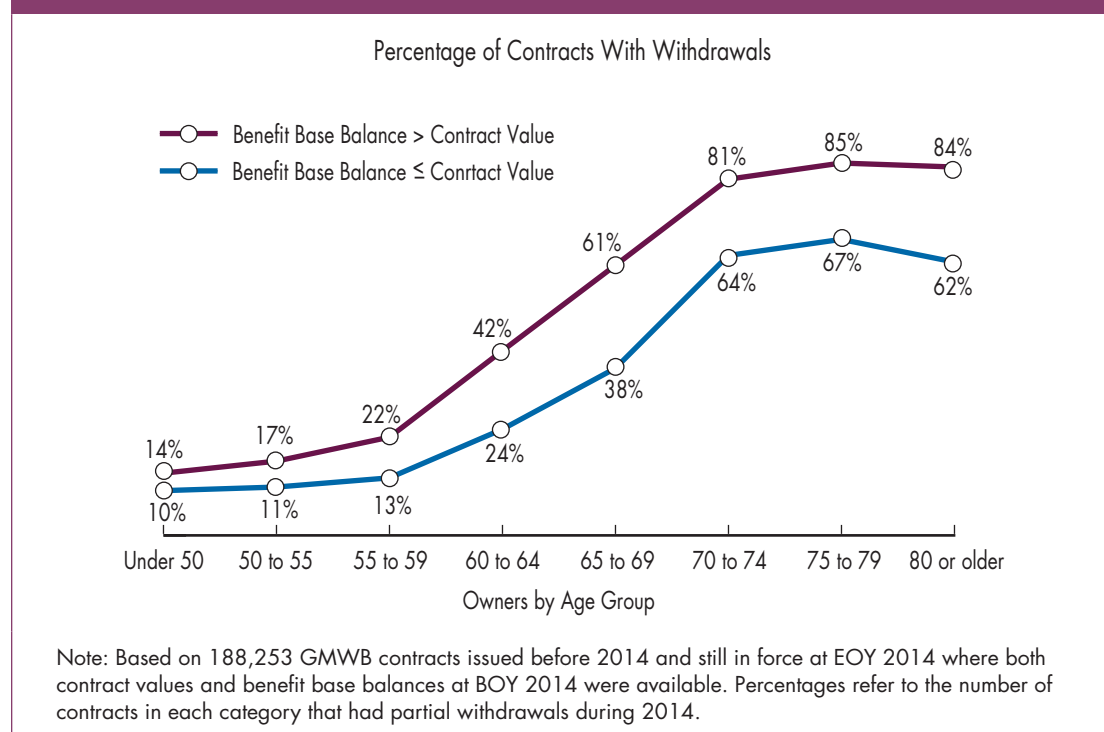
- A majority of GMWB contracts that had benefit base balances significantly larger than the contract values at BOY were held by older owners (Figure 2-3). For example, nearly 9 out of 10 GMWB contracts that had benefit base balances exceeding 150 percent or more than the contract values were held by owners aged 65 or older. These contracts are also more likely to have a higher representation of older duration contracts.
- A majority of older GMWB owners with older duration contracts initiated withdrawals in previous years and continued taking withdrawals in subsequent years. Older owners — particularly those aged 65 or older — are more likely to take and continue withdrawals over a longer period of time. Since their withdrawal amounts typically remain within the maximum amount offered in the GMWB contracts, their contract values are likely to decline over a period (unless they experience growth due to large and consistent market gains) while their benefit base balances are likely to remain level or proportionately adjusted with withdrawals, causing the gap between the benefit base balance and contract value to grow as the withdrawals continue.

As a result, we expect that the percentages of owners taking withdrawals by the amount the benefit base balance exceeded the contract value will be skewed both by older owners who started withdrawals years ago and contracts with long duration. We also expect that the percentage of owners who take withdrawals in a particular year where the benefit base balance was greater than the contract value may grow in the future.

²¹ Additional analysis found no significant difference in the withdrawal pattern for contracts where the benefit base balance exceeded the contract value when looking at withdrawal amounts that were above, at, or below the benefit maximum.

Examining the withdrawal behavior of contract owners and the relationship between the benefit base balance and the contract value can shed some light on these issues. *Just looking at owner’s age and the relationship between the benefit base balance and the contract value, in isolation, as shown in Figure 2-25 may not provide a complete picture.* Similar to GLWBs, it is likely that age and source of funds — not the amount the benefit base balance exceeds the contract value — that drive owner withdrawal behavior, although there may be a small effect driven mainly by withdrawals among younger owners.²²

Figure 2-25: GMWB Withdrawal Rates for Contracts Where the Benefit Base Balance Exceeded the Contract Value



The percent of owners who took withdrawals in 2014 was higher for contracts where the benefit base balance was greater than the contract value (Figure 2-25). The gap between the percentages of owners who took withdrawals increases with older age groups. For example, the percentages of owners taking withdrawals — among those aged 60 to 64 with benefit base balances greater than the contract value — was 42 percent compared with 24 percent of owners whose contract value was greater than or equal to the benefit base balance. Eighty-four percent of owners aged 80 or older with benefit base balances that surpassed the contract value took withdrawals, compared to 62 percent of owners whose contract values were greater than or equal to the benefit base balance.

²² Refer to “Withdrawal Activity for Contracts In-the-Money or Not-in-the-Money” section of the GLWB chapter for additional discussion of the relationship between the benefit base, the contract value, and withdrawal activity.

The fact that the vast majority of owners who start withdrawals are likely to continue withdrawals in subsequent years influences the trend shown in the Figure 2-25. As owners continue withdrawals, it is also likely the benefit base balance will continue to exceed the contract value, as contract values decrease and benefit base balances remain level or are proportionately adjusted by the amount of withdrawals. The contracts where the contract values were greater than or equal to the benefit base balance were likely issued recently and have not been exposed to the market volatility, or are contracts issued years ago that did not have withdrawals and have experienced growth in their contract value. This helps to explain why contracts owned by older owners taking withdrawals from longer duration contracts have a widening gap. Also, if the benefit base balance exceeding the contract value was a major reason for initiating withdrawals, withdrawal activities among owners under age 60 would have been higher.

GMWB contracts, by design, have a limited number of guaranteed income payments and do not provide guaranteed income for life. As a result, a higher percentage of owners are likely to take withdrawals compared to the percentage of owners taking withdrawals from GLWB contracts. It can be argued that GMWB contract owners might be more sensitive regarding initiating withdrawals when the benefit base balance exceeds the contract value so that they could take advantage of guaranteed withdrawals over a certain number of years at a time when their contract values are lower.

Over the last few years, we have seen very little evidence that a benefit base balance exceeding the contract value was a principal driver of GMWB withdrawal activity:

- As shown earlier in this chapter, the percentage of owners taking withdrawals is linked closely with owners reaching age 70½ and the need for RMDs. Increased withdrawal activity among owners aged 70 or older was mostly due to their taking withdrawals from contracts that had longer durations which increases the chances that contract value will be lower than the benefit base balance.
- Our analysis of the timing of first withdrawals among contracts issued in 2007 (Table 2-4) provides further evidence that a benefit base balance exceeding the contract value is not a strong determinant of withdrawal activity. Over an eight-year period, most of these contracts were exposed to different degree of which the benefit base balance surpassed the contract value, especially between years 2009 and 2012. Yet we did not observe any significant difference in the onset of withdrawal activity during these years. If the amount that the benefit base balance exceeded the contract value was a major force behind the decision to begin taking withdrawals, we should have seen a jump in withdrawal activity in 2009, when contracts contract values were likely to be well below their benefit base balances after the

market crisis. The same could be said for 2012 when market volatility in late 2011 and low returns to start 2012 caused many contract values to be lower than the benefit base balances. 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 yet we did not see any heightened withdrawal activity.

Utilization by Select Characteristics

Utilization of GMWBs varies substantially across a variety of owner, contract, and benefit characteristics for contracts sold before 2014 (Table 2-8). 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.²³

	Unweighted		Weighted by 2014 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
Age of owner				
50 to 54	12%	5%	17%	9%
55 to 59	14%	8%	20%	14%
60 to 64	27%	18%	35%	25%
65 to 69	42%	33%	48%	38%
70 to 74	67%	52%	68%	52%
75 to 79	71%	58%	69%	54%
80 or older	67%	57%	61%	50%
Market type				
IRA	57%	44%	61%	46%
Nonqualified	38%	31%	38%	31%
Distribution Channel				
Career Agent	44%	29%	48%	31%
Independent agent/ independent B-D	52%	43%	55%	46%
Full service national B-D	49%	39%	48%	37%
Bank	54%	44%	56%	45%

²³ This measure of utilization should not be equated with the percentage of contract value withdrawn.

Table 2-8: GMWB Utilization by Selected Characteristics (continued)

	Unweighted		Weighted by 2014 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
Share Class				
B-share	48%	37%	52%	39%
C-share	53%	43%	52%	43%
L-share	51%	42%	52%	42%
Contract Value, EOY 2013				
Under \$25,000	45%	34%	54%	38%
\$25,000 to \$49,999	50%	40%	54%	41%
\$50,000 to \$99,999	51%	41%	54%	42%
\$100,000 to \$249,999	50%	39%	52%	40%
\$250,000 to \$499,999	50%	39%	52%	40%
\$500,000 or more	47%	36%	48%	36%

Note: Based on 191,761 contracts sold before 2014 and still in force at EOY 2014. 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.

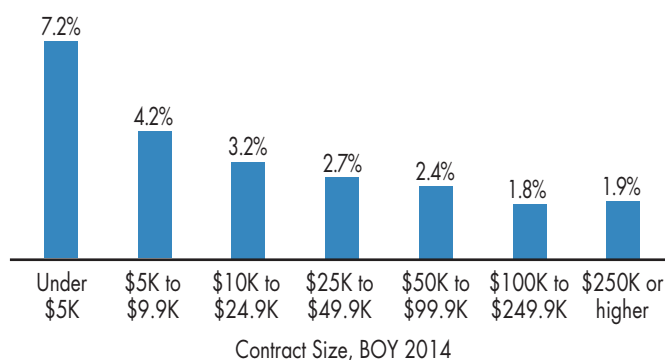
- As with GLWBs, older GMWB owners are much more likely to take withdrawals, especially systematic withdrawals, than are younger owners. In part, this activity reflects RMDs from IRAs after age 70½.
- Excluding contracts under \$25,000, size does not appear to be a significant factor in determining when a contract owner is likely to take withdrawals.
- Owners of VAs purchased through banks are more likely to take withdrawals compared with other channels.

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 balance will incorporate premium that is received within a certain time period after the issue of contract. Among contracts sold in 2014 or earlier:

- Only 2 percent received additional premium during 2014.
- The average additional premium in 2014 was \$24,200, with a median of \$6,000.
- Younger owners were more likely to add premium than older owners. For example, 7 percent of owners under age 60 added premium, compared with 1 percent of owners aged 70 or older.
- Three percent of IRAs received additional premium compared with 2 percent of nonqualified contracts.
- Seven percent of contracts with values less than \$5,000 at BOY received additional premiums, while contracts with BOY values of \$10,000 or more were less likely to receive additional premiums (Figure 2-26).

Figure 2-26: GMWB Percentage of Contracts Receiving Additional Premium by Size of Contract



Note: Based on 191,760 contracts issued before 2014 and still in force at EOY 2014.

Premium received in new and existing contracts constituted less than one seventh of the outflows associated with partial withdrawals, full surrenders, deaths, and annuitizations in 2014 (Table 2-9). The total number of GMWB contracts in force declined about 8 percent during 2014.

Table 2-9: GMWB Net Flows

	Dollars (Billions)	Contracts	Average Contract Size
In-force, BOY 2014	\$25.33	211,247	\$119,889
Premium received during 2014	\$0.41		
Benefits paid			
Partial withdrawals	\$1.14		
Full surrenders	\$1.89	17,308	\$109,020
Annuitizations	\$<0.1	422	\$150,033
Deaths/Disability	\$0.15	1,758	\$86,218
Investment growth	\$0.54		
In-force, EOY 2014	\$23.03	193,971	\$118,716

Note: Based on 211,247 contracts. Premium received = newly issued contracts + premium into existing contracts. Dollar values for contracts sold before 2014 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 2014 that terminated during the year were set equal to the current-year premium.

We have not shown some measures to preserve confidentiality and avoid revealing company-specific information, as data in those measures were heavily weighted for one company or due to a very limited sample size.

Persistence

The GMWB contract surrender rate in 2014 was **8.2%**.

Surrender activity for VAs with GMWBs is a critical factor in measuring liability. If persistency is very high among contracts with benefit base balance amounts that are larger than the contract value, then insurers may have payouts that are larger or for longer durations than anticipated. The presence of living benefits on VAs may lead owners to keep their contracts beyond the surrender penalty period, thereby keeping more of an insurer’s fee-generating assets under management.

Surrender rates in 2014 among GMWB contracts issued before 2014 were 8.2 percent for contract surrender rate and 8.7 percent for cash value surrender rate.

Surrender Activity of Owners Taking Withdrawals

Owners who did not take withdrawals in 2014 had higher surrender rates than those who took withdrawals. When GMWB owners — particularly those aged 70 and older — took withdrawals, the surrender rates were relatively low at around 5 percent (Figures 2-27 and 2-28).

Figure 2-27: GMWB Contract Surrender Rates by Owners Taking Withdrawals in 2014

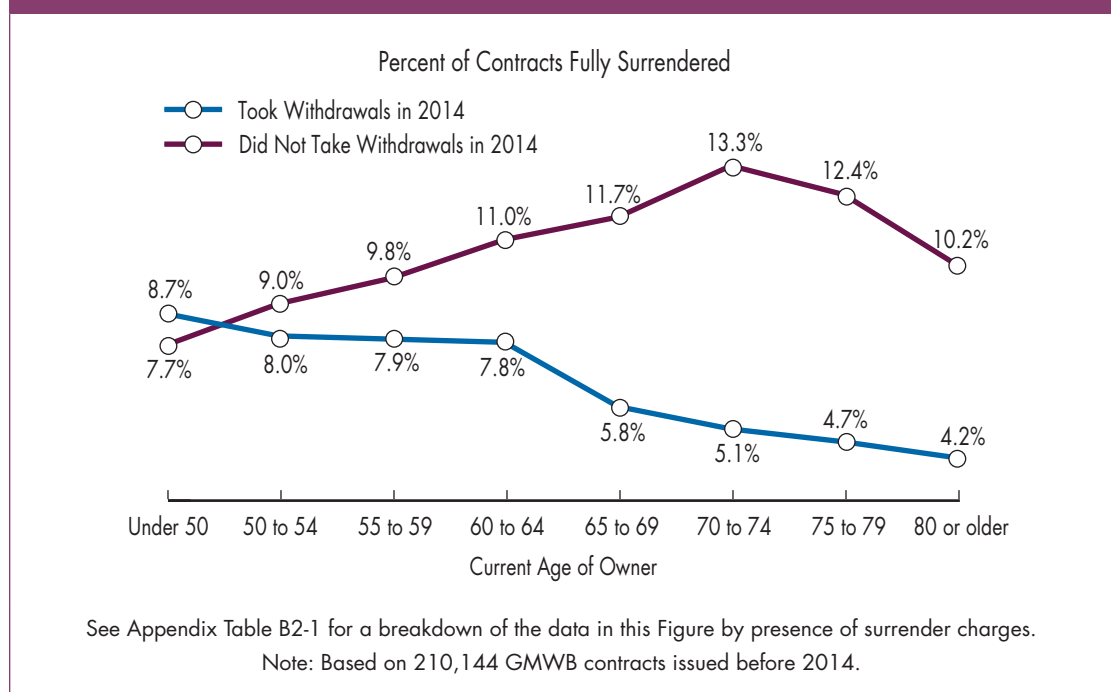
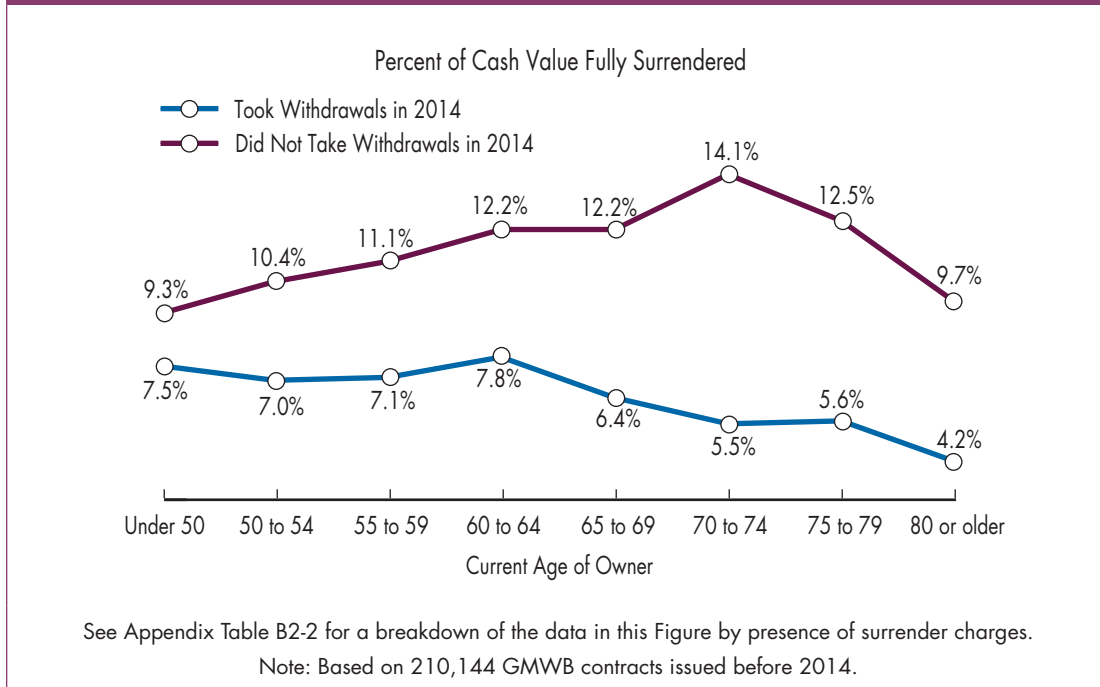


Figure 2-28: GMWB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014



Younger owners who take withdrawals, particularly those under age 65, have higher surrender rates than older owners who take withdrawals. 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.

Past withdrawals can also indicate increased likelihood that owners will surrender earlier than expected. Figures 2-29 and 2-30 show the contract and cash value surrender rates for owners who took withdrawals before 2014.

Figure 2-29: GMWB Contract Surrender Rates by Owners Who Took Withdrawals Before 2014

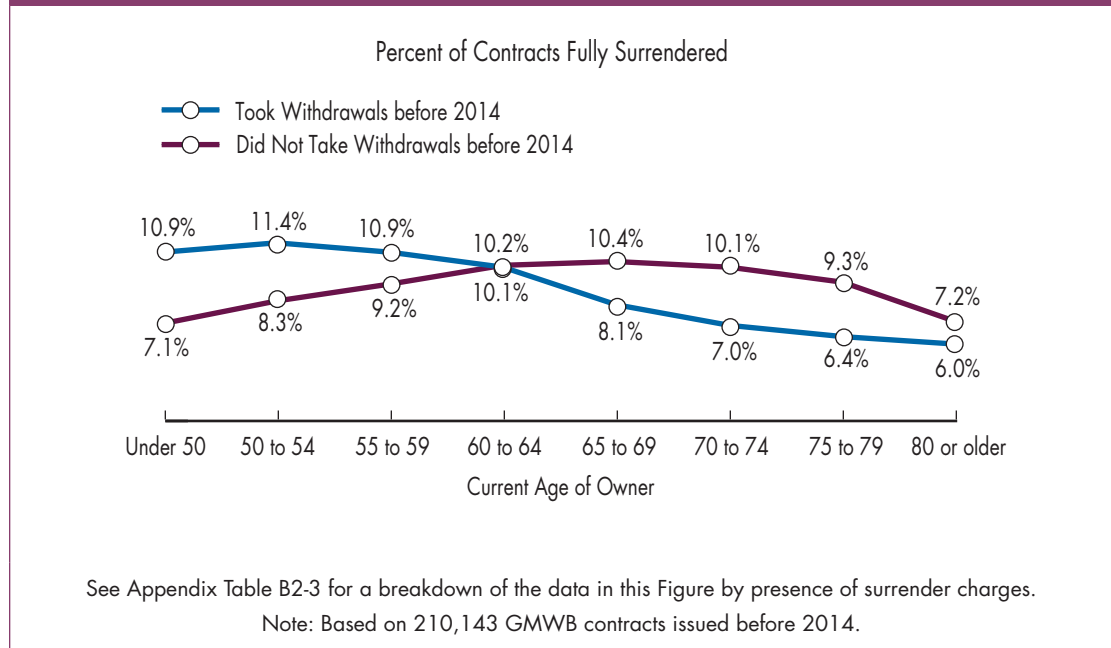
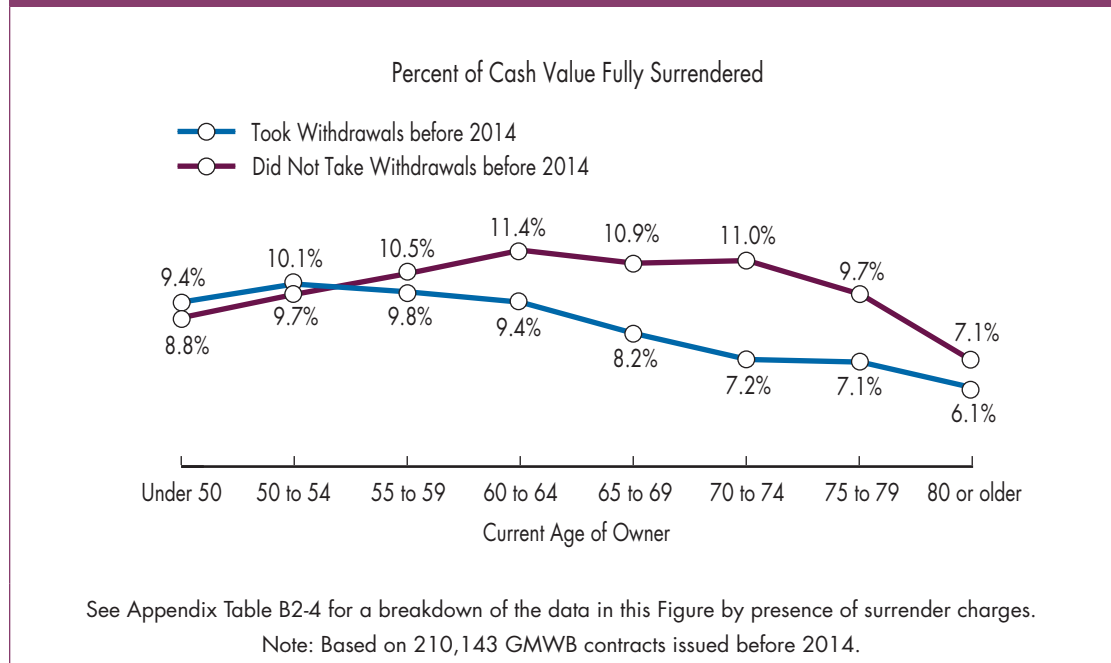


Figure 2-30: GMWB Cash Value Surrender Rates by Owners Who Took Withdrawals Before 2014



Eleven percent of owners under age 60 who took withdrawals before 2014 surrendered their contracts by EOY 2014. In contrast, only 8.4 percent of owners under age 60 who did not take withdrawals before 2014 surrendered their contracts in 2014. Surrender rates among owners who did not take withdrawals before 2014 were highest among owners ages 60 to 74. It is possible that many of these owners did not need the withdrawal guarantees or funds for immediate use.

Surrender Activity by Share Class and Presence of Surrender Charge

Persistence for contracts with surrender charges is higher than for contracts without surrender charges. The contract surrender rate in 2014 was 3.7 percent for contracts with surrender charges and almost five times that amount (16.9 percent) for contracts that exited the surrender penalty period in 2014. Among contracts that exited the surrender penalty period in 2013 or earlier, the contract surrender rate was 9.5 percent.

Figures 2-31 and 2-32 illustrate the contract and cash value surrender rates by presence of surrender charges and share classes. At BOY 2014, 55 percent of GMWB contracts had no surrender charges.

Figure 2-31: GMWB Contract Surrender Rates in 2014 by Share Classes

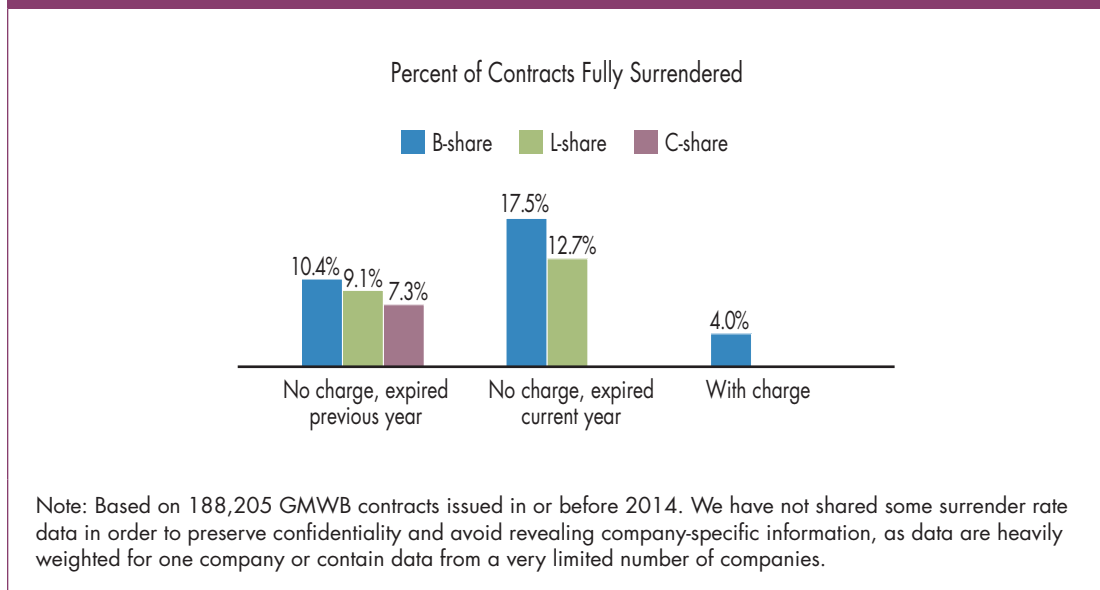
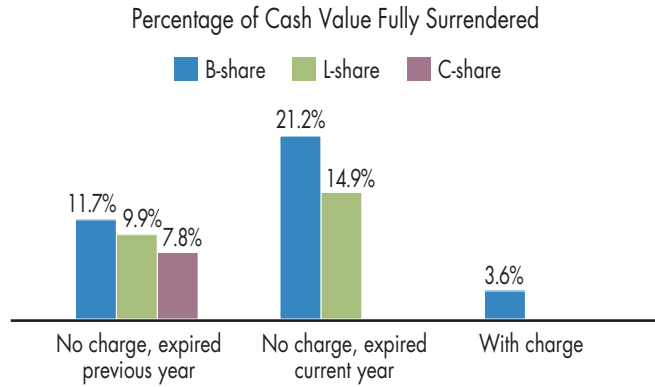


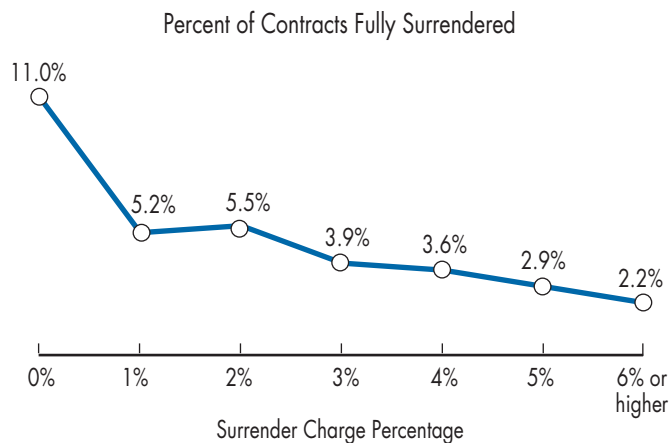
Figure 2-32: GMWB Cash Value Surrender Rates in 2014 by Share Classes



Note: Based on 188,205 GMWB contracts issued in or before 2014. We have not shared some surrender rate data in order to preserve confidentiality and avoid revealing company-specific information, as data are heavily weighted for one company or contain data from a very limited number of companies.

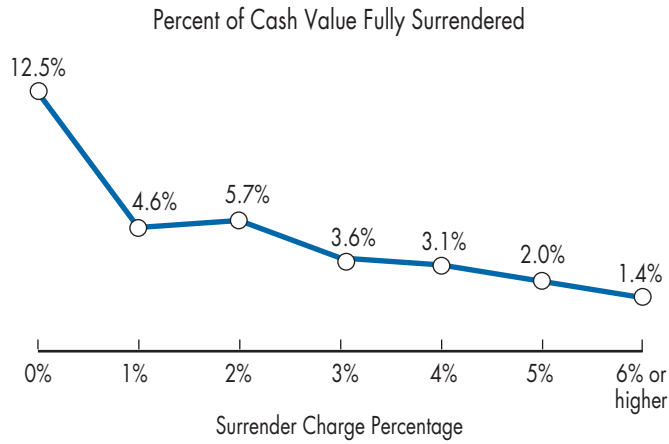
Surrender rates are influenced by surrender charges. Contracts with higher surrender charges have lower surrender rates and vice versa (Figures 2-33 and 2-34).

Figure 2-33: GMWB Contract Surrender Rate in 2014 by Surrender Charge Percentage



Note: Based on 195,659 GMWB contracts issued in or before 2014. We have not shown surrender charges over 6 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.

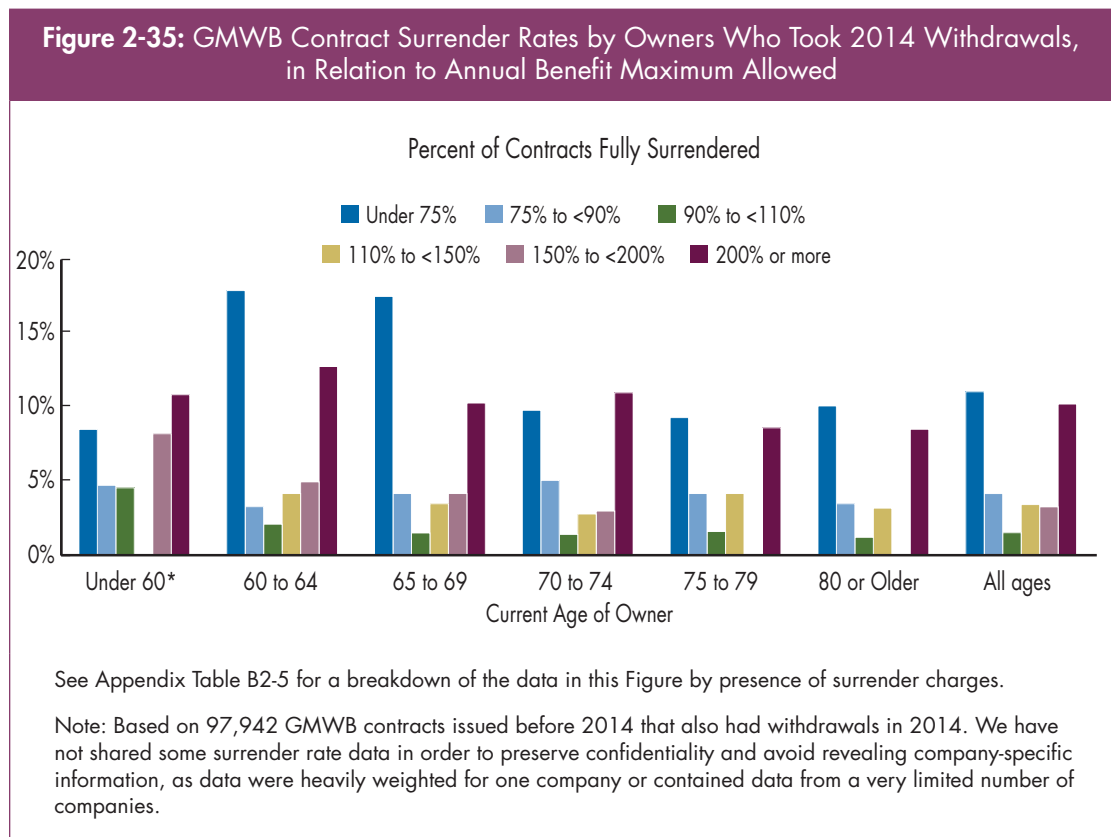
Figure 2-34: GMWB Cash Value Surrender Rate in 2014 by Surrender Charge Percentage



Note: Based on 195,659 GMWB contracts issued in or before 2014. We have not shown surrender charges over 6 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.

Surrender Activity by Percentage of Benefit Maximum Withdrawn

Figure 2-35 shows the contract surrender rates among owners who took withdrawals in 2014 by the percentage of annual benefit maximum withdrawn. Contract surrender rates were higher for owners who took withdrawals below 75 percent of the maximum allowed in the contracts, and for owners who took 200 percent or more of the maximum allowed in the contracts.



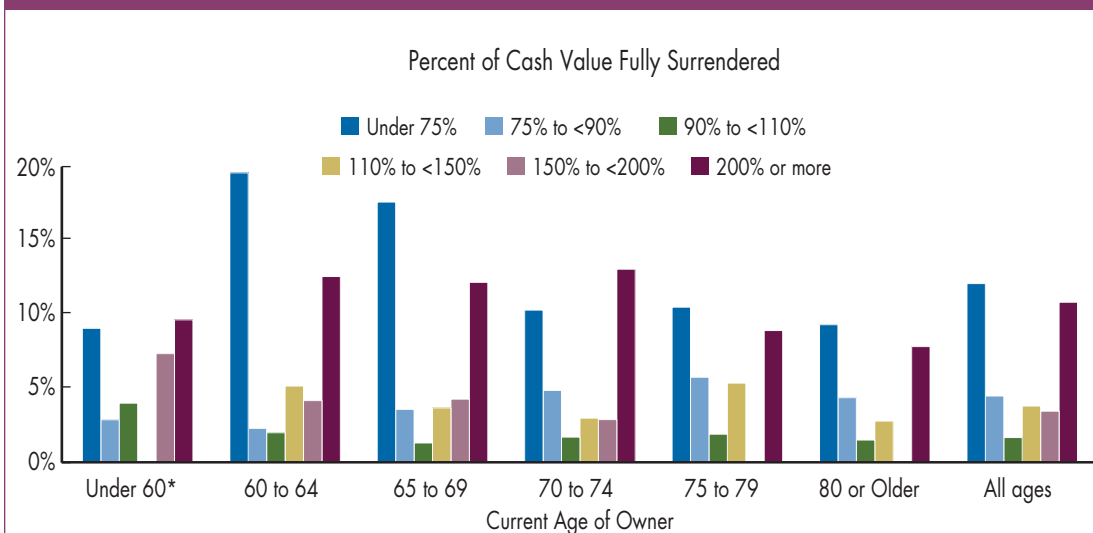
Similar to GLWBs, the GMWB surrender rates show a U-shaped relationship to the percentage of annual benefit maximum withdrawn — those with very low and very high ratios of withdrawals to the maximum allowed have higher surrender rates than those in the middle categories. This relationship holds true across all age groups. Among the two thirds of owners who withdrew between 75 percent and less than 200 percent of the benefit maximum, surrender rates were 2 percent. Among the subset of these owners who withdrew between 90 percent and less than 110 percent of the benefit maximum, rates were 1.5 percent.

In summary, the GMWB owners in two extremes — those taking less than 75 percent or 200 percent or more of the maximum withdrawal amount allowed in their contracts accounted for 34 percent of all owners who took withdrawals in 2014. But, they were responsible for 70 percent of contracts surrendered and cash value surrendered in 2014. Any withdrawal behavior not in line with the GMWB’s maximum withdrawal amount is thus a reliable indicator of surrender behavior.

Owners who withdrew either less than 75% or 200% or more of the maximum withdrawal amount allowed accounted for 70% of all contracts surrendered in 2014.

The cash value surrender rates among owners who took withdrawals in 2014, split by the percentage of benefit maximum withdrawn, show a similar pattern to contract surrender rates (Figure 2-36).

Figure 2-36: GMWB Cash Value Surrender Rates by Owners Who Took 2014 Withdrawals, in Relation to Annual Benefit Maximum Allowed



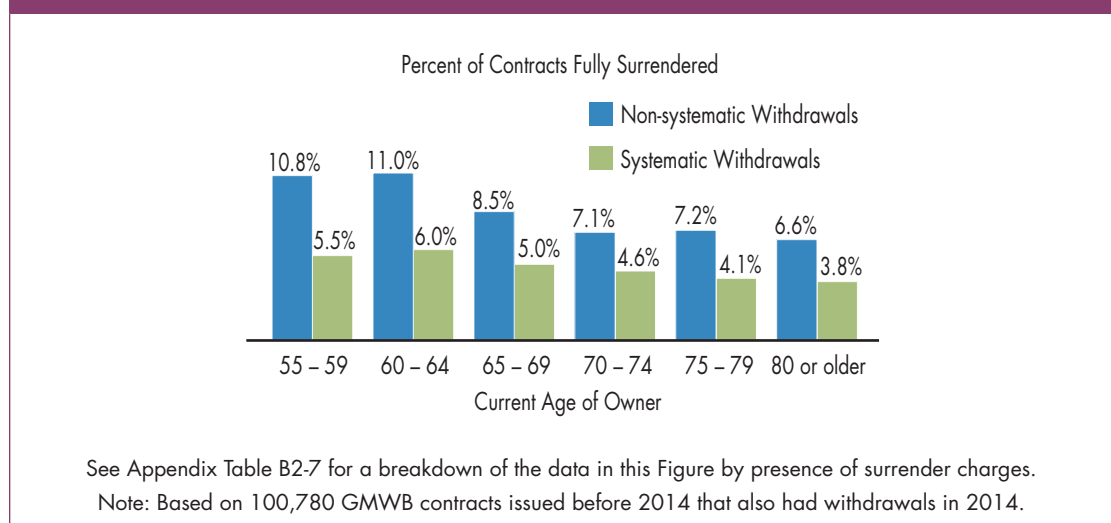
See Appendix Table B2-6 for a breakdown of the data in this Figure by presence of surrender charges.

Note: Based on 97,942 GMWB contracts issued before 2014 that also had withdrawals in 2014. We have not shared some surrender rates data in order to preserve confidentiality and avoid revealing company-specific information, as data were heavily weighted for one company or contained data from a very limited number of companies.

Surrender Activity by Owners Taking Withdrawals by Withdrawal Method

Another strong indicator of whether owners are likely to surrender their contracts is the method they use to take withdrawals — systematic or non-systematic (Figure 2-37). As we have seen, owners who use systematic withdrawals are less likely to take more than the benefit maximum, and younger owners are making the most excess withdrawals.

Figure 2-37: GMWB Contract Surrender Rates by Withdrawal Method

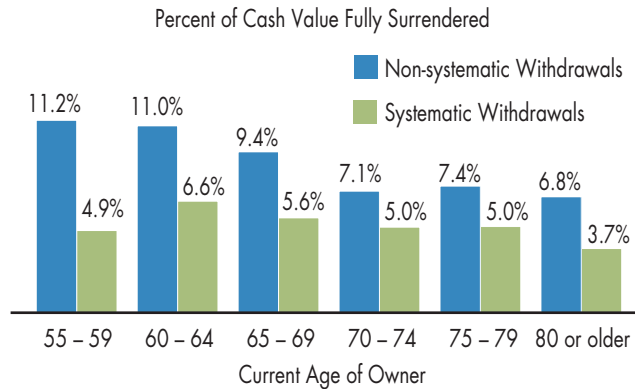


Overall, the contract surrender rate among owners who took non-systematic withdrawals in 2014 was 8.1 percent while the surrender rate among owners who withdrew systematically was 4.4 percent. Non-systematic withdrawals are more often linked with younger owners who have higher surrender rates.

Systematic withdrawal contract surrender rate = **4.4%**

Non-systematic withdrawal contract surrender rate = **8.1%**

Owners using a non-systematic withdrawal method accounted for just under a quarter of all owners taking withdrawals, and for just over one third of all surrendered contracts and cash surrender values in 2014. The cash value surrender rates by withdrawal methods follow a very similar pattern to the contract surrender rates (Figure 2-38).

Figure 2-38: GMWB Cash Value Surrender Rates by Withdrawal Method

See Appendix Table B2-8 for a breakdown of the data in this Figure by presence of surrender charges.

Note: Based on 100,780 GMWB contracts issued before 2014 that also had withdrawals in 2014.

Another factor that influenced surrender rates involves whether or not contracts had benefit base balances that exceeded the contract values. In general, surrender rates are lower for contracts where the benefit base balance exceeds the contract value. GMWB owners appear to be sensitive to the amount that the benefit base balance exceeds the contract value when deciding whether or not to surrender their contracts. Actuaries need to account for this sensitivity when setting assumptions for lapse behavior.

However, looking at surrender rates based only on the amount that the benefit base balance exceeds the contract value may not completely address all issues regarding persistency risk. Owner surrender behavior also correlates closely with withdrawal behavior.

Surrender rates for GMWB contracts are not as low as for VAs with GLWBs. Across all contracts, 8.2 percent surrendered during 2014. For business sold before 2014, cash value surrender rates were 8.7 percent (Table 2-10).

Table 2-10: GMWB Surrender Rates

	Percent of Contracts Surrendered	Percent of Contract Value Surrendered
All contracts	8.2%	8.7%
Year of issue		
Before 2004	6.8%	6.9%
2004	9.8%	11.0%
2005	9.1%	10.0%
2006	9.3%	10.0%
2007	10.6%	12.0%
2008	6.3%	6.4%
2009	4.4%	4.3%
Age of owner		
Under 50	7.8%	9.0%
50 to 54	8.9%	9.8%
55 to 59	9.6%	10.3%
60 to 64	10.2%	10.7%
65 to 69	9.3%	9.5%
70 to 74	8.0%	8.4%
75 to 79	7.0%	7.8%
80 or older	6.3%	6.4%
Contract value, BOY 2014		
Under \$25,000	9.6%	8.6%
\$25,000 to \$49,999	7.4%	7.4%
\$50,000 to \$99,999	7.5%	7.6%
\$100,000 to \$249,999	8.1%	8.2%
\$250,000 to \$499,999	9.1%	9.2%
\$500,000 or higher	10.6%	11.2%

Table 2-10: GMWB Surrender Rates (continued)

	Percent of Contracts Surrendered	Percent of Contract Value Surrendered
Gender		
Male	8.4%	9.0%
Female	8.1%	8.5%
Market type		
IRA	8.4%	8.8%
Nonqualified	7.9%	8.7%
Cost structure		
B-share	8.0%	8.4%
C-share	7.4%	7.8%
L-share	8.7%	9.4%
Distribution channel		
Bank	9.0%	9.5%
Career agent	6.3%	6.3%
Independent agent/independent B-D	8.5%	8.9%
Full-service National B-D	9.7%	11.0%
<p>Note: Based on 210,802 contracts sold before 2014. 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

GMWB features are similar to those of GLWBs, with some important differences (Table 2-11). GMWBs tend to be less expensive, are much less likely to reward delayed withdrawals with automatically increasing benefit base balances, and often have higher maximum annual withdrawal percentages.

Table 2-11: 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	Issued in 2013
Average M&E charge	1.34%	1.27%	1.38%	1.41%	1.37%	1.36%	1.36%	1.37%	1.22%
Average benefit fee	0.55%	0.57%	0.53%	0.52%	0.56%	0.61%	0.61%	0.73%	0.92%
Average number of subaccounts	60	59	59	61	63	62	61	65	66
Product has fixed account									
Yes	84%	90%	75%	73%	63%	65%	65%	18%	15%
No	16%	10%	25%	27%	37%	35%	35%	82%	85%
Product still available as of 12-31-2014									
Yes	45%	54%	82%	89%	92%	96%	97%	100%	100%
No	55%	46%	18%	11%	8%	4%	3%	0%	0%
Rider still available as of 12-31-2014									
Yes	0%	0%	1%	5%	6%	5%	7%	17%	60%
No	100%	100%	99%	95%	94%	95%	93%	83%	40%
Cap on benefits									
Yes	60%	70%	30%	25%	2%	0%	0%	0%	0%
No	40%	30%	70%	75%	98%	100%	100%	100%	100%
Benefit fee basis*									
Contract value	54%	42%	32%	34%	41%	38%	37%	82%	40%
Benefit base	42%	56%	65%	63%	58%	62%	63%	18%	60%
VA subaccounts	3%	1%	2%	2%	1%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%
Average maximum age at election	81	80	83	83	85	85	85	85	85
Asset allocation restrictions									
Forced asset allocation model	32%	30%	70%	82%	98%	99%	100%	100%	100%
Limitations on fund selection	7%	9%	5%	3%	0%	0%	0%	0%	0%
No, but may restrict	31%	30%	20%	12%	1%	0%	0%	0%	0%
No restrictions	9%	3%	5%	3%	1%	1%	0%	0%	0%
Dynamic asset allocation	21%	28%	0%	0%	0%	0%	0%	0%	0%

Table 2-11: 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	Issued in 2013
Among contracts with maximum charge info. provided									
Average maximum rider charge	1.16%	1.26%	0.87%	0.81%	0.77%	0.76%	0.76%	0.76%	2.27%
Step-up use restrictions									
Can be used multiple times	84%	95%	94%	94%	94%	95%	93%	83%	86%
Can be used once	9%	4%	4%	1%	0%	0%	0%	0%	0%
No	7%	1%	2%	5%	6%	5%	7%	17%	14%
Step-up availability**									
Quarterly or more frequently	0%	0%	3%	11%	0%	0%	0%	0%	0%
Annually	68%	83%	73%	72%	97%	100%	100%	100%	100%
Every 3 years	1%	2%	2%	1%	1%	0%	0%	0%	0%
Every 5 years	31%	15%	22%	16%	2%	0%	0%	0%	0%
Benefit base automatically increases if withdrawals are not taken immediately									
Yes, based on compound interest	0%	1%	1%	1%	1%	0%	0%	0%	0%
Yes, based on simple interest	13%	7%	13%	15%	1%	1%	1%	1%	1%
No	87%	92%	86%	84%	98%	99%	99%	99%	99%
Maximum annual withdrawal percentage									
5%	23%	28%	18%	20%	7%	5%	7%	17%	14%
6%	0%	0%	1%	0%	0%	0%	0%	0%	0%
7%	74%	69%	79%	80%	93%	95%	93%	83%	86%
10%	3%	3%	2%	0%	0%	0%	0%	0%	0%
Impact on benefit base if excess withdrawals are taken									
Pro rata	31%	21%	32%	30%	42%	39%	38%	83%	86%
Dollar-for-dollar	8%	24%	45%	56%	58%	62%	63%	18%	15%
None, if RMDs from IRA	60%	57%	68%	82%	99%	100%	100%	100%	100%
Other	63%	83%	53%	49%	3%	0%	0%	0%	0%

*If the benefit fee was based on the higher of benefit base or contract value, then the basis categorization was determined for each individual contract.

**Among contracts that allowed multiple step-ups

Note: Based on 213,459 contracts sold before 2014. We have not shared data on products issued in 2014 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.

Key Findings

- Seven percent is by far the most common annual withdrawal maximum, followed by 5 percent.
- Unlike GLWB contracts, most GMWB contracts do not offer an automatic increase in benefit base in case owners do not take immediate withdrawals. Also, most GMWB contracts do not have caps on benefit base balances.
- Annual step-up options are the most common.



Chapter Three

2014 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 2014, sales of GMIBs were estimated at \$9.0 billion, down 24 percent from the 2013 estimated total of \$11.9 billion and down over 50 percent from the 2012 estimated total of \$18.1 billion. GMIB election rates, when any GLB was available, were consistent throughout 2014, at 10 percent.²⁴ 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. By the end of 2014, 1 in 4 contracts had reached their benefit maturity date.

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 reducing the growth rates and annuitization factors that determine guaranteed payout amounts.

GMIB analyses are based on a total of 1,601,902 VAs, issued by 15 companies. These results represent a total of 69 GMIB riders introduced between 1989 and 2014. Just under 50 percent of the contracts were issued in 2007 or earlier.

At end-of-year (EOY) 2014, the LIMRA Secure Retirement Institute estimates the GMIB assets in the industry at \$226 billion.²⁵ The in-force GMIB contracts in the current study represent \$191 billion in assets as of December 31, 2014 — 85 percent of total industry assets.

²⁴ *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2014*, LIMRA, 2015.

²⁵ *Ibid.*

Owner Profiles

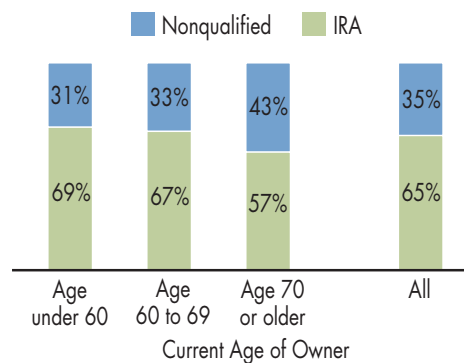
Source of Funds and Ownership of GMIBs

Two thirds of GMIB contracts were funded with IRA money.

Two thirds of GMIB contracts were funded from qualified sources of money, part of a trend where a greater share of annuity contracts are being funded from qualified sources or rollover assets rather than nonqualified sources (Figure 3-1). Funding a GMIB with IRA savings is more common among younger buyers, particularly those under age 70.

While the owners under age 60 constitute just under one third of GMIB owners (31 percent), 7 out of 10 funded their contracts with IRA savings. Owners aged 70 or over represent 30 percent of the GMIB contracts.

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



Based on 1,504,513 contracts issued before or in 2014 and still in force at EOY 2014.

GMIB Owner and Contract Characteristics

Table 3-1 provides a summary of GMIB owner and contract characteristics at EOY 2014.

Table 3-1: GMIB Owner and Contract Characteristics	
	GMIB Contracts In Force
Age of owner	
Under 50	9%
50 to 54	8%
55 to 59	13%
60 to 64	18%
65 to 69	20%
70 to 74	15%
75 to 79	9%
80 or older	6%
Average age	64 years
Gender	
Male	52%
Female	48%
Market type	
IRA	65%
Nonqualified	36%
Distribution Channel	
Career agent	28%
Independent agent/independent B-D	38%
Full-service National B-D	25%
Bank	10%
Year of issue	
Before 2002	4%
2002	4%
2003	7%
2004	7%
2005	8%
2006	8%
2007	9%
2008	9%
2009	9%
2010	8%
2011	13%
2012	8%
2013	5%
2014	3%

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

	GMIB Contracts In Force
Cost Structure	
A-share	2%
B-share	70%
C-share	2%
L-share	21%
Other	5%
Contract value, EOY 2014 as percent of contracts	
Under \$25,000	18%
\$25,000 to \$49,999	17%
\$50,000 to \$99,999	24%
\$100,000 to \$249,999	28%
\$250,000 or higher	12%
Contract value, EOY 2014 as percent of contract value	
Under \$25,000	2%
\$25,000 to \$49,999	5%
\$50,000 to \$99,999	14%
\$100,000 to \$249,999	35%
\$250,000 or higher	44%
Average contract value, EOY 2014	\$126,084
Median contract value, EOY 2014	\$76,858
Note: Based on 1,515,132 contracts still in force at EOY 2014.	

Key Findings

- B-share (70 percent) contracts were by far the most common cost structures in 2014.
- Two thirds of GMIB contracts were purchased using qualified money.
- Just under 4 out of 10 contracts were issued through the independent agent/independent B-D channel; 1 in 4 were issued through both the career agent and full-service national B-D channels.
- At EOY 2014, 40 percent of the contracts had values of \$100,000 or more, representing four fifths of GMIB assets.

Benefit Base

At beginning-of-year (BOY) 2014, two thirds of GMIB contracts issued before 2014 had benefit bases that exceeded contract values. Many of these contracts are still recovering from market losses incurred during the financial crisis. The average difference between the median benefit base and contract value was approximately \$10,200 (Table 3-2).

Table 3-2: GMIB Benefit Bases and Contract Values, at BOY 2014

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$202,795,625,283	\$180,073,392,466	89%
Average	\$140,947	\$125,154	89%
Median	\$86,671	\$76,456	88%
Percent of contracts where benefit base was greater than contract value.			64%
Note: Based on 1,438,810 GMIB contracts issued before 2014 with GMIB benefit bases as of BOY and EOY 2014. Excludes contracts for which the GMIB benefit bases could not be determined.			

Despite equity market gains in 2014, the average contract value increased only 1 percent, while the average benefit base amount grew 4 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 increased by 19 percentage points in 2014 (Table 3-3). The average difference between the median benefit base and contract value grew from \$10,200 at BOY to \$13,200 by EOY. At EOY, the median benefit base stood at \$90,300, 17 percent higher than the median contract value of \$77,100.

The average benefit base was **16 percent** higher than the average contract value at EOY 2014.

Table 3-3: GMIB Benefit Bases and Contract Values, at EOY 2014

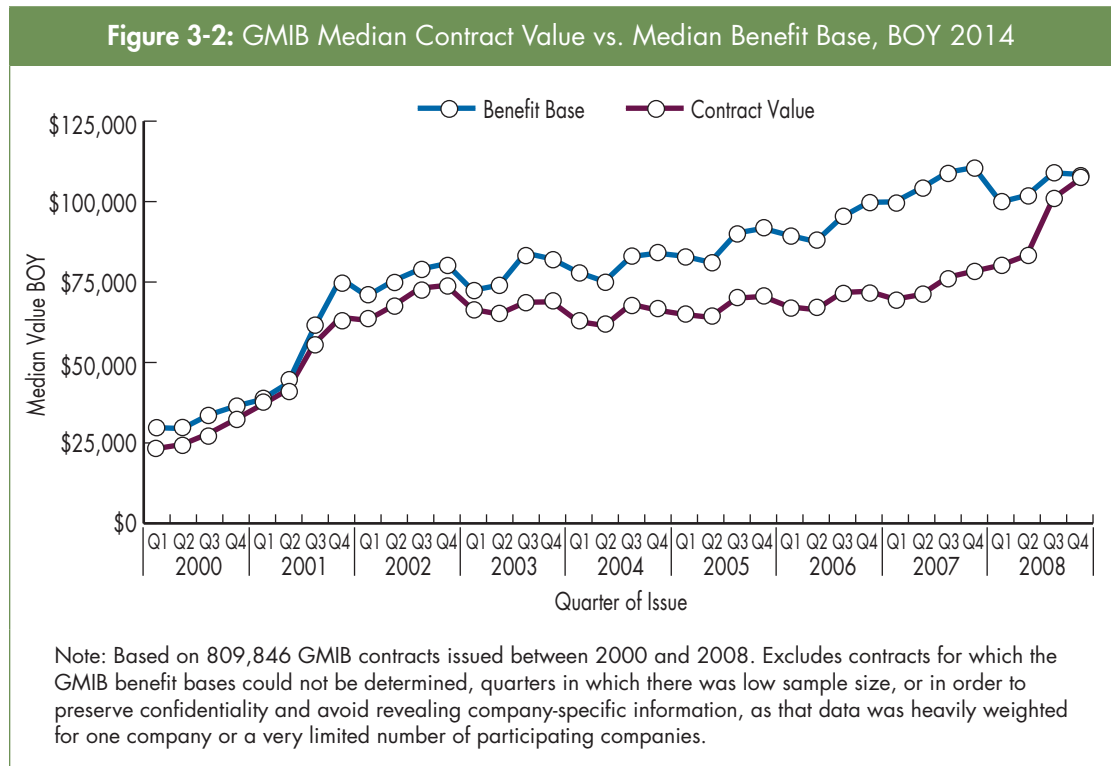
	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$211,305,470,077	\$182,063,373,180	86%
Average	\$146,861	\$126,537	86%
Median	\$90,256	\$77,059	85%
Percent of contracts where benefit base was greater than contract value			83%
Note: Based on 1,438,810 GMIB contracts issued before 2014 with GMIB benefit bases as of BOY and EOY 2014. Excludes contracts for which the GMIB benefit bases could not be determined.			

Benefit Bases by Quarter and Year of Issue

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 reasonable to strong gains from 2012 to 2014.

Figure 3-2 shows BOY 2014 median contract value and median benefit base value by quarter of issue. Contracts sold before 2002 had smaller contract values than those sold in mid to late 2000. For these contracts, exposure to two bear markets (2001–2002 and 2008–2009) impacted their contract values while their benefit bases remained the same or grew.

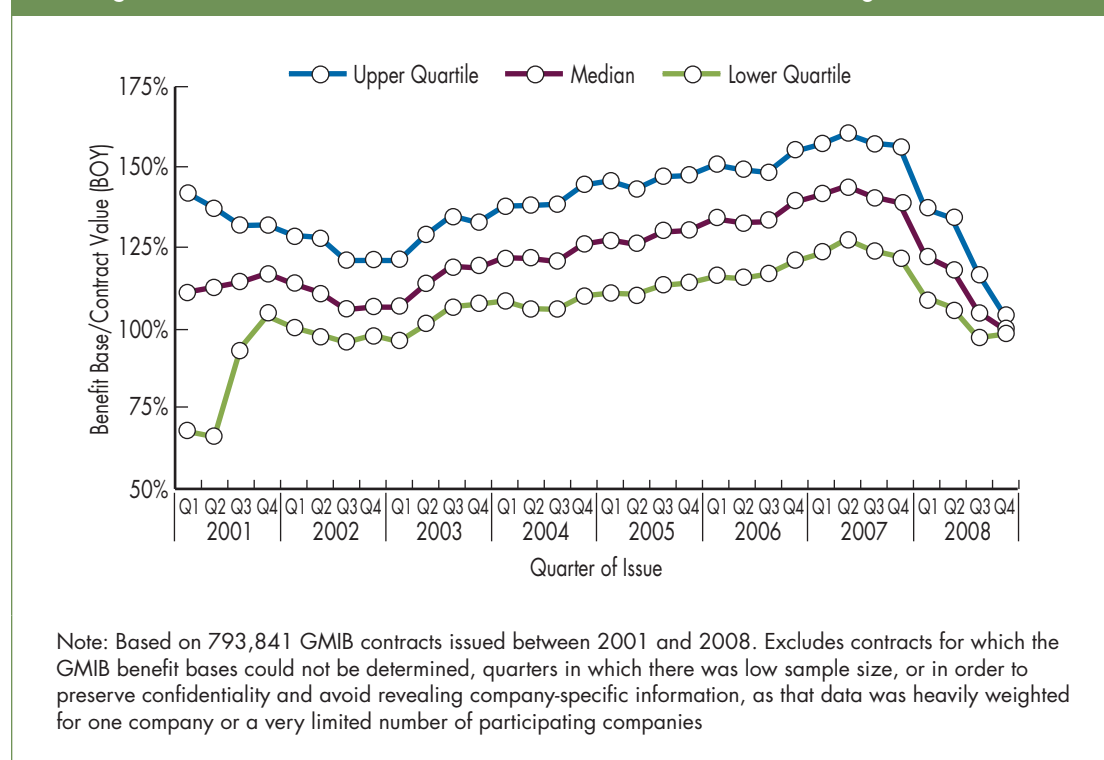
New benefit calculation methods were introduced in 2003 and later. Older benefit calculation methods defined the benefit base in terms of premiums paid, or premiums increased at a specified annual rate (e.g., 6 percent roll-up) until benefit maturity. The more recent benefit calculations take into account positive investment performance, by “ratcheting up” the benefit base over time. Market losses had the most impact on contracts issued in late 2006 through 2007, and these contract benefit bases exceed the contract values by \$21,000 to \$33,000.



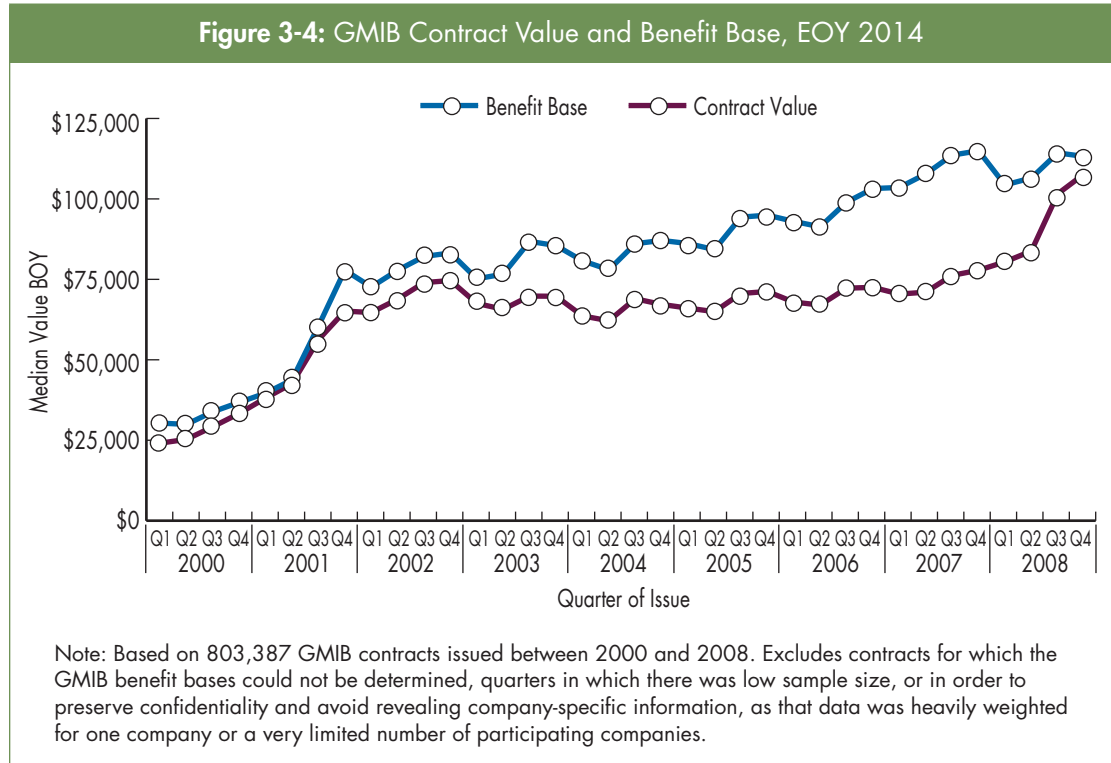
Looking at the quartile ranges of the benefit base to contract value (BB/CV) ratios at BOY 2014, contracts issued in early 2001 had the largest deviation of BB/CV ratios (Figure 3-3). From 2002 through mid-2008, the range between the upper and lower quartiles remained fairly tight — between 23 and 35 basis points. All of these trend lines increased from Q1 2003 through Q2 2007. Beginning Q1 2008, 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 2014, not the distribution of contract values. The inter-quartile range gives a sense of how widely (or narrowly) the ratios are distributed.

Figure 3-3: GMI Benefit Base to Contract Value Inter-Quartile Range, BOY 2014

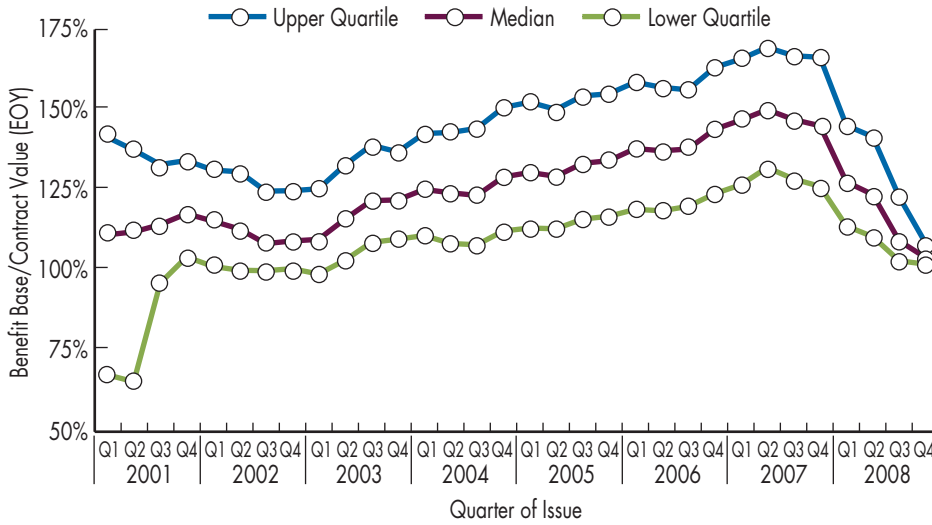


By EOY 2014, the difference between the benefit base amount and contract value for the typical contract had increased (Figure 3-4). Overall, the median contract value grew 1 percent while the median benefit base grew 4 percent. The median contract value increased from \$76,500 at BOY 2014 to \$77,100 at EOY 2014, while the median benefit base amount increased from \$86,700 at BOY 2014 to \$90,300 at EOY 2014.



The inter-quartile range analysis at EOY 2014 shows an increase in BB/CV ratios compared to BOY (Figure 3-5). The range between the upper and lower quartiles expanded slightly — particularly for contracts issued from 2005 – 2007. The median ratios of BB/CV in contracts issued from Q1-2001 through Q4-2008 ranged from 103 to 149 percent at EOY.

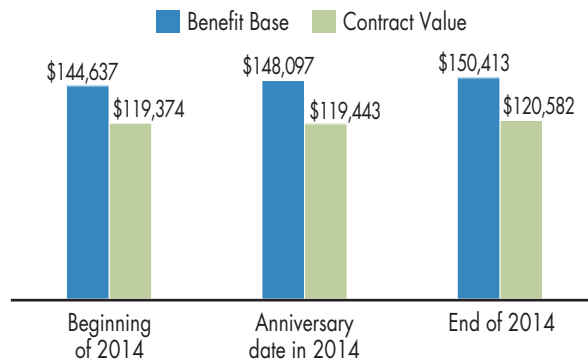
Figure 3-5: GMIB Benefit Base to Contract Value Inter-Quartile Range, EOY 2014



Note: Based on 787,624 GMIB contracts issued between 2001 and 2008. Excludes contracts for which the GMIB benefit bases could not be determined, quarters in which there was low sample size, or 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.

The average contract value grew from \$119,400 at BOY 2014 to \$120,600 at EOY 2014, an increase of 1 percent (Figure 3-6). On the anniversary date, the average benefit base increased slightly from \$144,600 at BOY to \$148,100, due to roll-up and step-up provisions. At EOY 2014, the average benefit base was \$150,400, a difference of \$29,800 compared with the average contract value.

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



Note: Based on 732,518 GMIB contracts issued before 2014 and still in force at EOY 2014. Excludes contracts for which the GMIB benefit bases (as of BOY, the contract's anniversary date, or EOY) could not be determined.

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

35% of the contracts had BOY BB/CV ratios of less than 100%, while **17%** had EOY ratios of less than 100%.

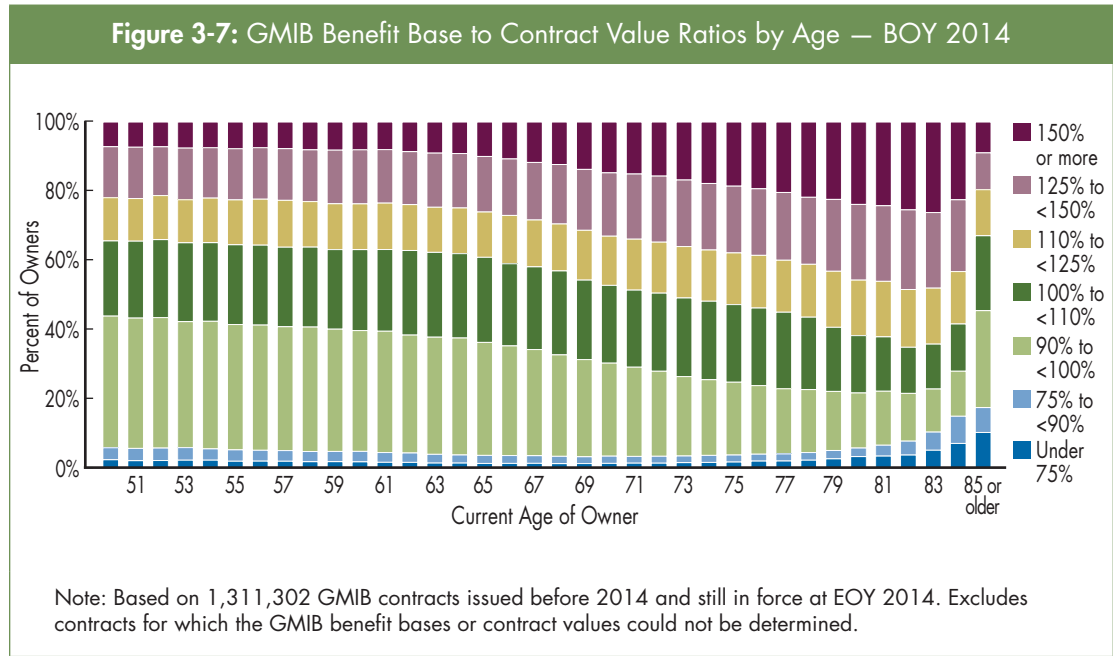
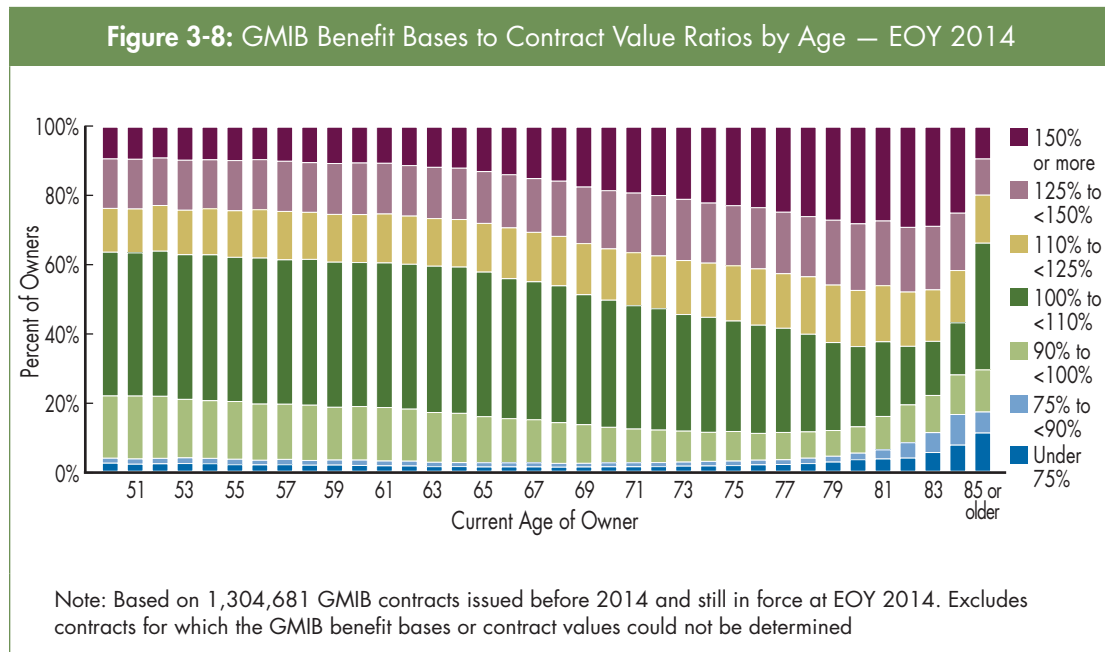


Figure 3-7 shows the BB/CV ratios by age at BOY 2014. For in-force contracts issued before 2014, only 5 percent of contracts had BB/CV ratios below 90 percent and 31 percent had ratios of 90 to less than 100 percent; 23 percent of the contracts had BB/CV ratios of 100 to less than 110 percent; and 14 percent of contracts had their benefit bases exceeding contract values by 110 to less than 125 percent. Twenty-eight percent of the contracts had BB/CV ratios of 125 percent or more.

Owners aged 70 or older had comparatively more contracts with BB/CV ratios of 125 percent or more. Thirty-seven percent of contracts with owners aged 70 to 79, and 38 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 just under a third (31 percent) of all contract owners, 41 percent of all contracts with BB/CV ratios of 125 percent or more were within this age cohort.

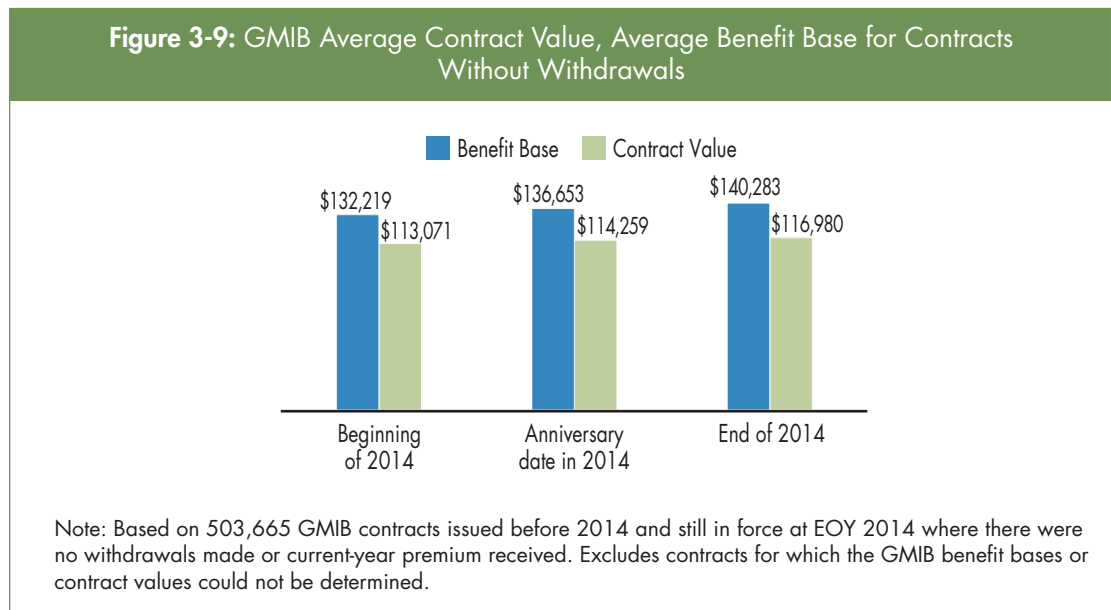
Figure 3-8 shows the distribution of BB/CV ratios by age at EOY 2014. There were 4 percent of contracts with BB/CV ratios below 90 percent and 13 percent with ratios of 90 to less than 100 percent; 39 percent had BB/CV ratios of 100 to less than 110 percent; 14 percent had benefit bases exceeding contract values by 110 to less than 125 percent, and 30 percent had BB/CV ratios of 125 percent or more.²⁶



²⁶ Refer to “Benefit Base to Contract Value Ratios by Age” in GLWB chapter for additional discussion of the relationship between BB/CV ratios and age.

Benefit Base for Contracts With Withdrawals vs. Without Withdrawals

For in-force contracts issued before 2014 that did not have withdrawals (or additional premium) during the year, the average benefit base rose steadily from \$132,200 to \$136,700 on the anniversary date, to \$140,300 by EOY 2014, registering a 6.1 percent overall increase (Figure 3-9). The reason for such increases can be attributed to automatic roll-up of benefit bases in the case of non-withdrawals. The average contract value increased 3.5 percent during 2014 for contracts without withdrawals, going from \$113,100 at BOY 2014 to \$117,000 at EOY 2014.



Among contracts that incurred withdrawals in 2014, the average benefit base declined just under 1 percent from BOY to EOY while the average contract value decreased 5 percent, as limited investment growth during the year could not offset withdrawals in 2014.

In-the-Money

We can assess the extent to which a contract with a GMIB is in-the-money by comparing the GMIB benefit base with the contract value at 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, then 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 decision-making process 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.

There are multiple ways to measure in-the-moneyness. One method is to compare the benefit base to the contract value. This method can be found in the “Withdrawal Activity for GMIB Contracts In-the-Money or Not-in-the-Money” section of this chapter. Another method is to compare the value of the income stream that can be generated from the GMIB to the income that can be generated from the contract value. This method is used in this section of the report.

To calculate the in-the-moneyness of contracts with GMIBs, we used the following procedure, first for all in-force contracts, and then for the subset of contracts that reached their benefit maturities in 2014 or earlier:

1. For each contract in force at EOY 2014, 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. We multiplied these APV factors by the EOY benefit base. To facilitate this analysis, we assumed that all contracts had the option of exercising the GMIB benefit as of EOY 2014.
2. We determined the hypothetical single premium immediate annuity (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 17 insurers — representing 77 percent of 2014 fixed immediate annuity industry sales — in December 2014, 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.

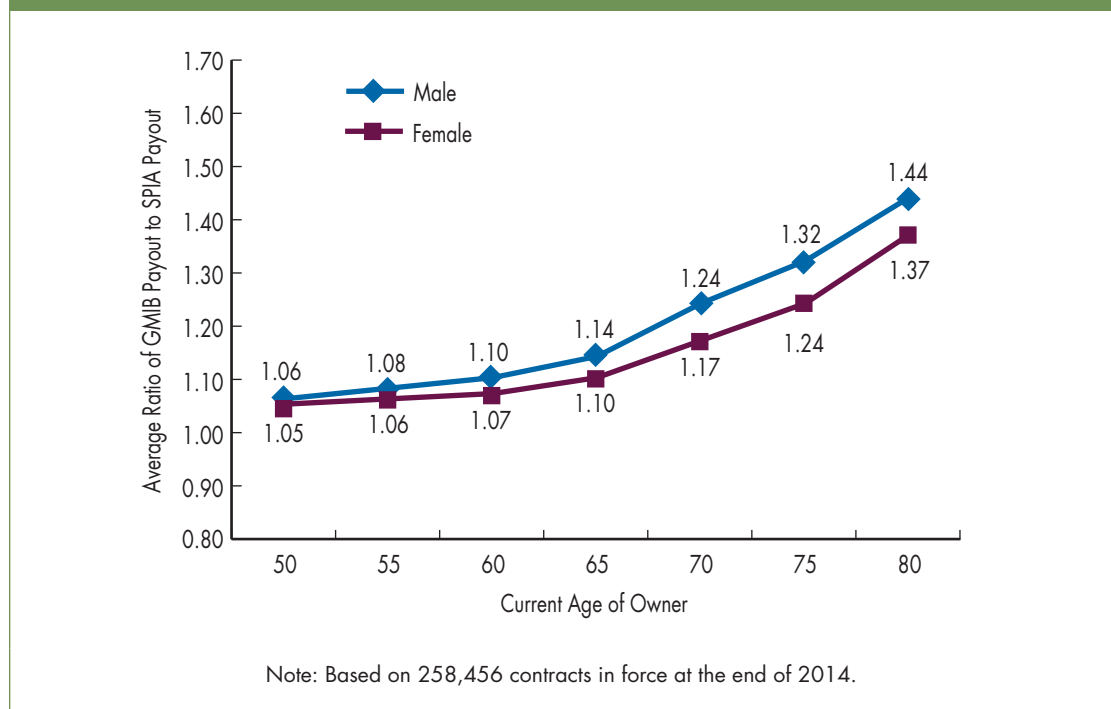
- We divided the hypothetical GMIB payout by the hypothetical SPIA payout for each contract. Ratios greater than 1.0 indicate the contract was (hypothetically) in-the-money at EOY 2014. Higher ratios indicate greater in-the-moneyness, and lower ratios indicate lower in-the-moneyness. If the ratio was 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 life-only payout is about **16 percent higher** than the corresponding SPIA payout.

Figure 3-10 illustrates the average GMIB-to-SPIA payout ratios for life-only payouts for male and female owners, for all benefit maturity years. Most contracts (62 percent) have ratios of 1.0 or less. But because the remaining contracts have GMIB payouts that exceed SPIA payouts, average ratios exceed 1.0 across the entire age range for both genders, indicating that the average GMIB contract is in-the-money. On average, for ages 50 through

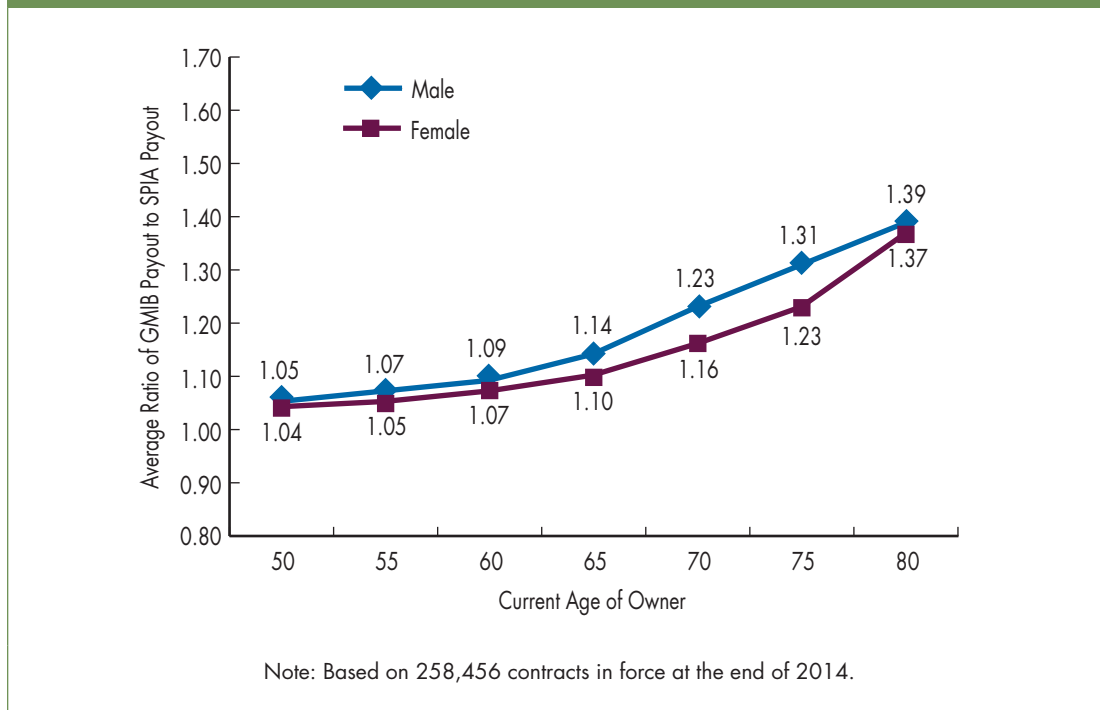
80, the GMIB payout is about 16 percent higher than the corresponding SPIA payout. This result reflects the fact that at EOY 2014, most GMIB contracts had benefit bases that were higher than contract values — enough to offset any reductions in payouts based on the GMIB calculation (e.g., age setbacks).

Figure 3-10: Ratio of GMIB Payout to SPIA Payout, for Life-Only Payouts by All Benefit Maturity Years



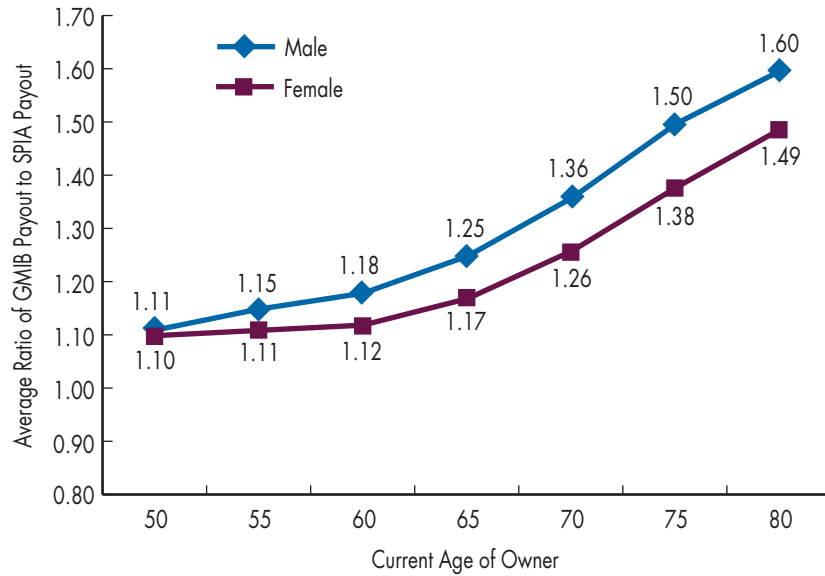
The ratios are higher for men than for women, and increase with age, largely because the GMIB payouts become more generous relative to SPIA payouts, per dollar applied, at older ages. The pattern is not appreciably different for life with 10-year period-certain payouts (Figure 3-11). One possible reason 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 3-11: Ratio of GMIB Payout to SPIA Payout, for Life With 10-Year Period-Certain Payouts by all Benefit Maturity Years



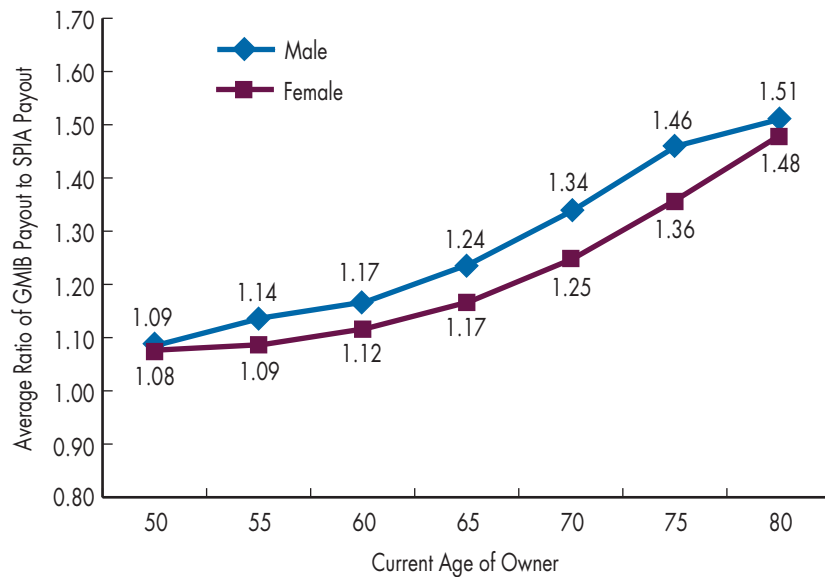
The previous analyses assumed that all contracts had the option of exercising the GMIB benefit as of EOY 2014. In fact, only 22 percent of these contracts had reached the end of the waiting period by 2014 and therefore most did not have the ability to activate the GMIB. Among the group of contracts that did have GMIB maturities in 2014 or earlier, a similar pattern exists: average ratios of GMIB payouts to SPIA payouts are above 1.0 and increase with age (Figures 3-12 and 3-13). However, one notable difference is that the overall ratios are higher. On average, the GMIB payout is about 28 percent higher than the corresponding SPIA payout. The higher in-the-moneyness results from the higher BB/CV ratios for older business.

Figure 3-12: Ratio of GMIB Payout to SPIA Payout, for Life-Only Payouts by Benefit Maturity Years 2014 or Earlier



Note: Based on 55,569 contracts in force at the end of 2014.

Figure 3-13: Ratio of GMIB Payout to SPIA Payout, for Life With 10-Year Period-Certain Payouts by Benefit Maturity Years 2014 or Earlier



Note: Based on 55,569 contracts in force at the end of 2014.

An alternative method for assessing in-the-moneyness for all contracts in force (not just those that have reached their benefit maturities) is 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 2014. 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 GMIBs 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 2014. 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 2014.

GMIB Benefit Calculation Methods

Almost all GMIB contracts issued before 2014 had GMIB benefits that were based on the roll-up or higher of ratchet or roll-up calculation methods (97 percent), which sets benefit bases equal to the higher of the largest prior anniversary or premiums rolled up at a specified growth rate (Figure 3-14). The most common 2014 annual roll-up percentages were 5, 6, and 7 percent. Roll-up rates from 5 to less than 6 percent were offered on just over one third of all contracts, while roll-up rates from 6 to less than 7 percent make up just under half of GMIB contracts (Figure 3-15).

Figure 3-14: GMIB Calculation Methods

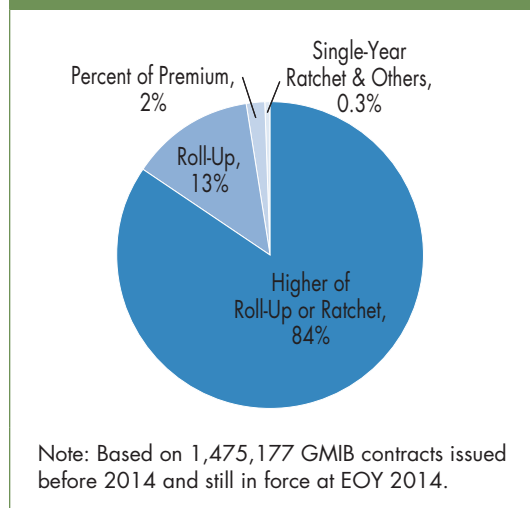
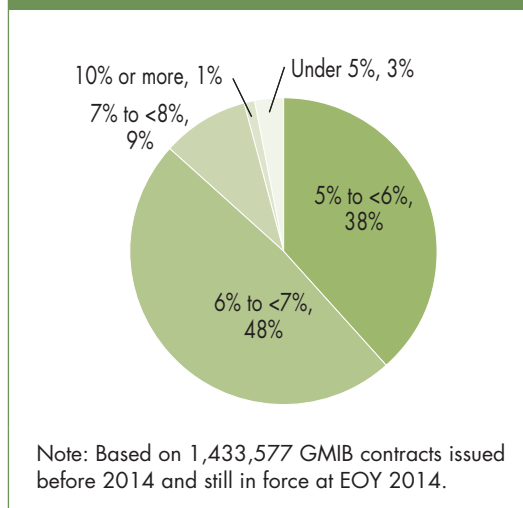


Figure 3-15: GMIB Percentage of Contracts by Roll-Up Rates



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 contract values.

One notable difference between GMIBs and GLWBs is their relative measures of the benefit base to contract value ratio. The ratio of benefit base to contract value in GLWBs at EOY 2014 was 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.

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 83,100 GMIB contracts issued before 2014 reached benefit maturity in 2014 (Figure 3-16). The 2014 annuitization rate for contracts reaching benefit maturity in 2014 was 3.8 percent. These contracts were mainly issued in the early 2000s. The annuitization rate in 2014 for contracts reaching benefit maturity in 2013 was lower at 1.0 percent. More than 81,100 GMIB contracts annuitized in 2014 that had reached their benefit maturity before 2010, and the annuitization rate for these in-force GMIB contracts was very low. Overall, the annuitization rate for all GMIB contracts issued before 2014 — and annuitized in 2014 — was only 0.6 percent.

Figure 3-16: GMIB Contracts Annuitized in 2014, by Benefit Maturity

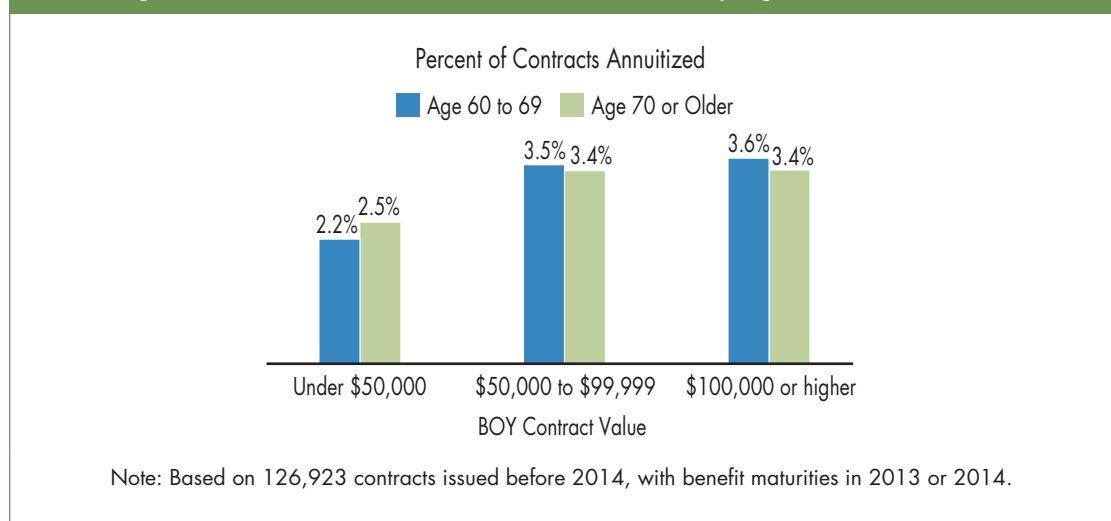
The 2014 annuitization rate for contracts reaching benefit maturity in the same year was higher than 2013. Also note that these annuitization rates reflect all GMIB types — dollar-for-dollar withdrawals and pro-rata adjustments. Pro-rata adjustment contracts generally have higher annuitization rates.

Contracts With Benefit Maturities in 2013 or 2014

Contract owners aged 60 and older are more likely to annuitize than are younger owners. Among contracts that reached benefit maturity in 2013 or 2014, 3.1 percent of owners in their 70s or older annuitized in 2014, compared with 3.0 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 (3.0 percent among those aged 60 to 69 to 3.1 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 3.0 percent for both owners aged 60 to 69 and owners aged 70 or older.

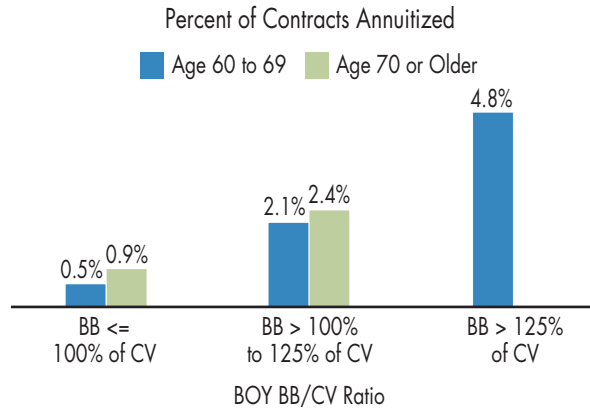
Larger contract sizes are associated with higher annuitization activity among contracts issued before 2014 that reached benefit maturity in 2013 or 2014 (Figure 3-17). For owners aged 60 to 69, the percentage of contracts with BOY contract values of \$100,000 or more that annuitized in 2014 was 64 percent larger than the percentage of contracts with values under \$50,000. For owners aged 70 or older, there was a 35 percent increase in the percentage of contracts with BOY values of \$100,000 or more that annuitized in 2014 over contracts with values under \$50,000.

Figure 3-17: GMB Contracts Annuitized in 2014, by Age and Contract Size



The amount the benefit base exceeded the contract value, as measured by the BB/CV ratio, also appears to be linked to annuitization rates (Figure 3-18). Less than 1 percent of contracts that reached benefit maturity in 2013 or 2014 were annuitized when the benefit base was equal to or less than the contract value. But the annuitization rate jumped to over 4 percent when the benefit base was more than 125 percent of the contract value.

Figure 3-18: GMIB Contracts Annuitized in 2014 With Benefit Maturity Date in 2013 or 2014, by Age and BOY 2014 BB/CV Ratio



Note: Based on 123,528 contracts issued before 2014, with benefit maturities in 2013 or 2014. Some data 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.

Table 3-4 provides a summary of owner and contract characteristics of the GMIB contracts that annuitized in 2014. Understanding which owners are likely to annuitize their contracts will provide annuity manufacturers with information to better anticipate which owners will take advantage of their GMIB riders.

Table 3-4: GMIB Owner of Annuitized Contract Characteristics Issued 2014 or Earlier*

	GMIB Contracts In Force
Age of owner	
Under 50	0.2%
50 to 54	0.4%
55 to 59	2.2%
60 to 64	13.3%
65 to 69	24.9%
70 to 74	21.4%
75 to 79	15.0%
80 or older	22.6%

Table 3-4: GMIB Owner of Annuitized Contract Characteristics Issued 2014 or Earlier*
(continued)

	GMIB Contracts In Force
Average age	72 years old
Gender	
Male	53%
Female	47%
Market type	
IRA	56%
Nonqualified	44%
Distribution Channel	
Career agent	17%
Independent agent/independent B-D	50%
Full-service National B-D	24%
Bank	8%
Cost Structure	
A-share	0.4%
B-share	81.0%
C-share	2.2%
L-share	13.8%
Contract value, EOY 2014 as percent of contracts	
Under \$25,000	16.1%
\$25,000 to \$49,999	19.7%
\$50,000 to \$99,999	27.9%
\$100,000 to \$249,999	25.3%
\$250,000 to \$499,999	8.5%
\$500,000 of higher	2.5%
Contract value, EOY 2014 as percent of contract value	
Under \$25,000	2.1%
\$25,000 to \$49,999	6.8%
\$50,000 to \$99,999	17.7%
\$100,000 to \$249,999	33.4%
\$250,000 to \$499,999	24.9%
\$500,000 of higher	15.1%
Average contract value, EOY 2014	115,198
Median contract value, EOY 2014	\$72,324
Note: Based on contracts that annuitized in 2014	
* Based on metrics that are calculated for each individual company and then the mean of these metrics was reported. This was necessary otherwise this table would have been suppressed in order to preserve confidentiality and avoid revealing company-specific information, as this data was heavily weighted for one company or a very limited number of participating companies.	

Key Findings

- Males represented 53 percent of annuitizations.
- Just under half of all annuitants were between ages 65 and 74. Over a third of contracts with owners aged 75 and over annuitized. Less than 3 percent of annuitants were under age 60.
- Half of the annuitized contracts were issued through the independent agent/independent B-D channel, and a quarter through the full-service national B-Ds channel. Career-agent-sold contracts represent 28 percent of all GMIB owners but had only 17 percent of the annuitants.
- At BOY 2014, 73 percent of the contract value annuitized came from contracts with contract values of \$100,000 or more.

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.

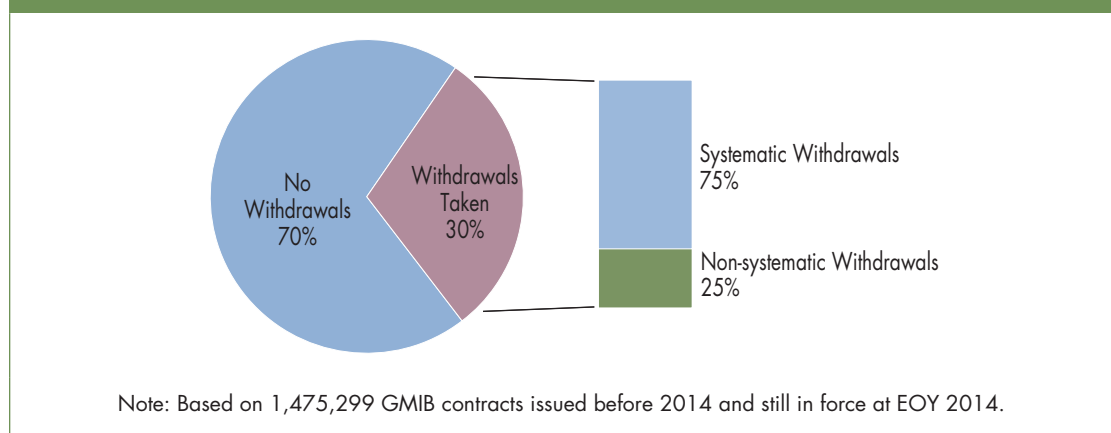
Because the present study is based on a single calendar year, withdrawal activity over time usually could not be tracked. Although we asked companies for the cumulative total withdrawals prior to 2014, not all companies could provide this information. In addition, not all companies could distinguish 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 2014

30% of GMIB contract owners took withdrawals during 2014; **75%** were systematic withdrawals.

Thirty percent of GMIB contracts issued before 2014 and still in force at EOY 2014 had at least some withdrawal activity during 2014 (Figure 3-19). This is relatively close to the 24 percent of GLWB owners who took withdrawals in 2014. Seventy-five percent of these GMIB contract owners utilized systematic withdrawals.

Figure 3-19: GMIB Percentage of Contracts With Withdrawals



Based on the 435,365 contracts issued before 2014 with withdrawals in 2014:

Median withdrawal amount in 2014 = **\$6,331.**

- The average withdrawal amount was \$11,714. The withdrawal rate was 7.9 percent based on the average BOY contract value of \$147,608.
- The median withdrawal amount was \$6,331. The withdrawal rate was 6.7 percent based on the median BOY contract value of \$95,080.
- Total 2014 withdrawals were \$5.1 billion, 2.8 percent of BOY in-force assets.

Withdrawal Activity by Benefit Reduction Methods

In general, GMIB 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 owner 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-five percent of contracts allow this benefit reduction method for withdrawals. Approximately 1 in 3 dollar-for-dollar contracts had withdrawals in 2014.

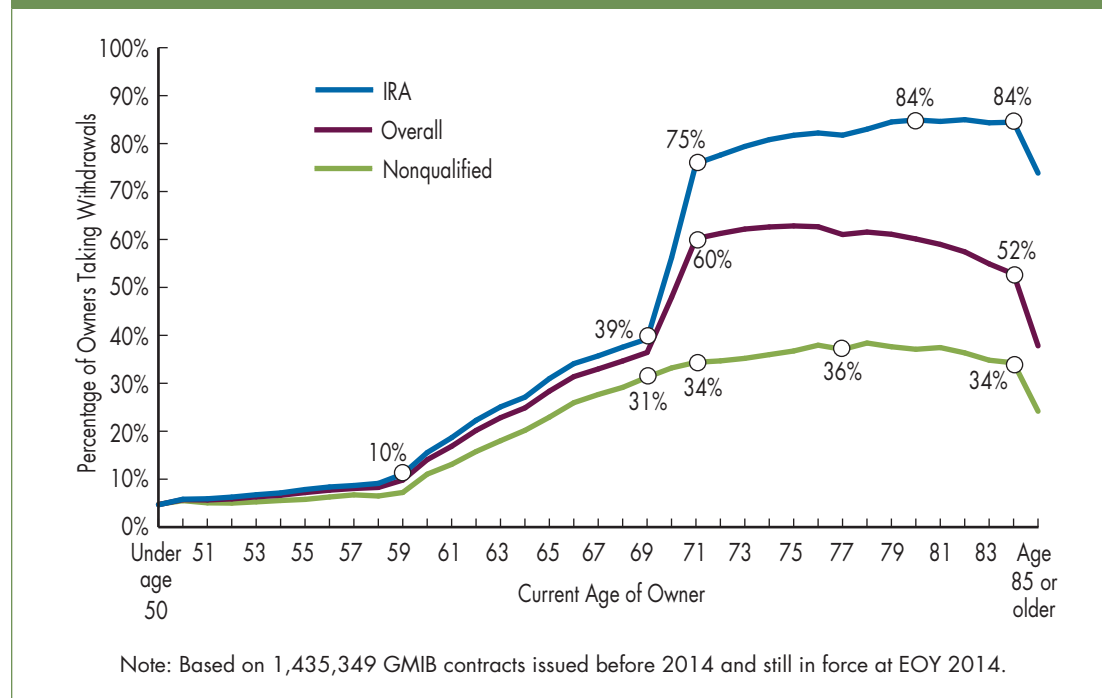
On the other hand, pro-rata withdrawals reduce the benefit base by the same percentage as the withdrawal. This withdrawal provision benefits contract owners when there are market gains in the contract value. Fifteen percent of GMIB contracts offer this method. Just under 1 in 5 pro-rata contract owners took withdrawals in 2014.

Withdrawal Activity by Source of Funds

The source of funds (i.e., whether the annuity was funded with qualified or nonqualified money) is one of the key drivers in understanding customer withdrawal behavior. The overall incidence of withdrawals in GMIB contracts over the past few years has stayed around 20 to 30 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 3-20).

Over **80%** of GMIB owners in their mid-70s and older took qualified withdrawals.

Figure 3-20: GMIB Percentage of Contracts With Withdrawals, by Source of Funds and Age of Owners



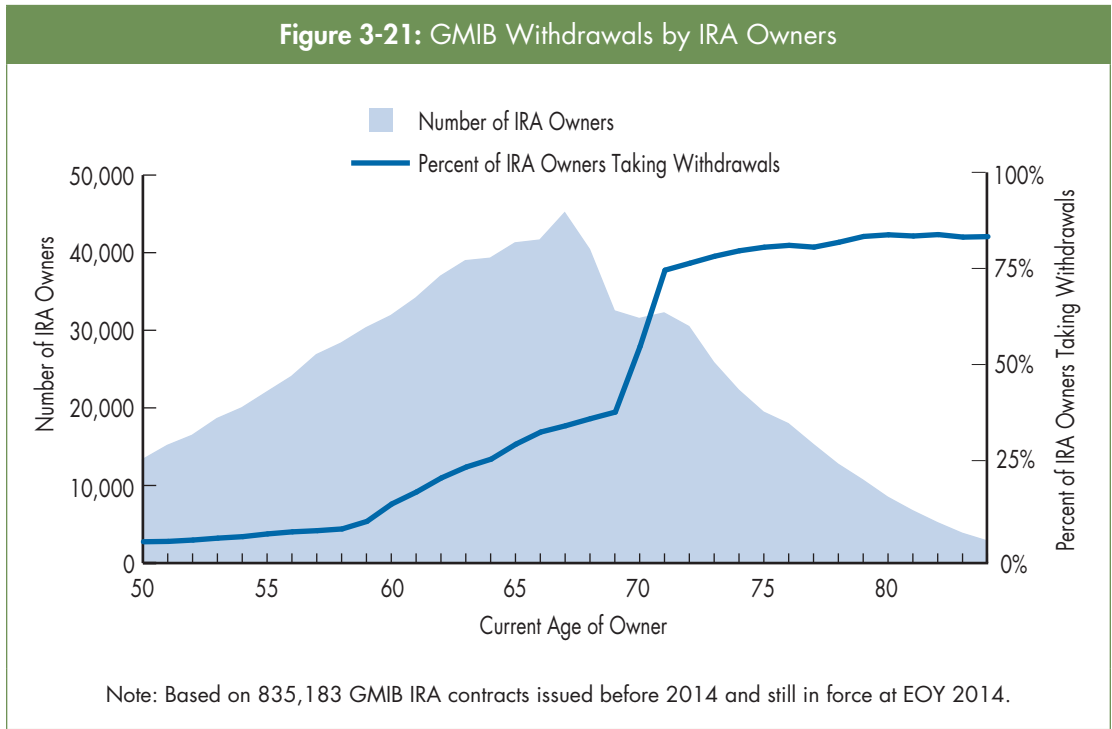
As with GLWBs, GMIB owner withdrawal behavior has three different phases:

- 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 69 — sometimes termed as the transition ages in retirement — less than 40 percent are 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 75 percent by age 71. After this age, the percent of qualified owners withdrawing slowly rises to 84 percent by age 79.

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 (12 percentage points), and from age 65 to age 75 (14 percentage points). Then the percentage of owners taking withdrawals levels off at around 37 percent before declining for owners aged 83 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, 43 percent own nonqualified annuities and only 34 percent are taking withdrawals. On the other hand, 74 percent of owners aged 70 and over who own qualified annuities are taking withdrawals. Overall, 57 percent of owners aged 70 and over are taking withdrawals from their GMIB contracts.

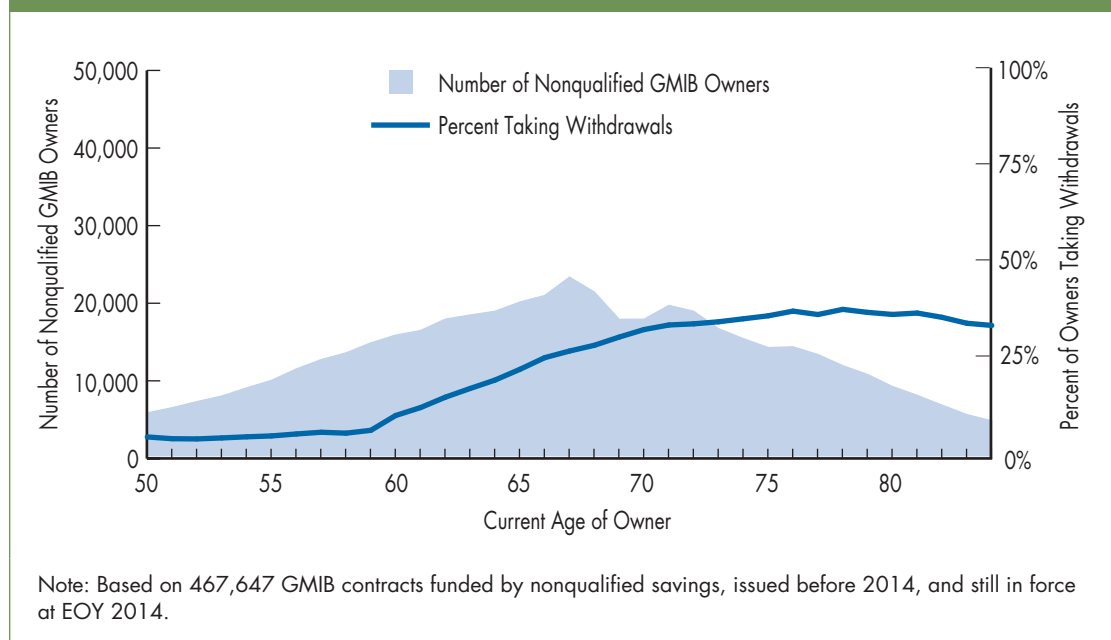
Insurance companies managing GMIB rider risk can consider distinguishing and evaluating that risk based on the sources of funding. The distinction between qualified and nonqualified sources of funds is important. The composite withdrawal activity by age cohort is not as reliable a measure of actual risk. With just under three quarters of qualified GMIB owners under age 70 — and only 1 in 5 taking withdrawals — the measure is skewed downward. This is particularly important as younger customers invest in annuities with qualified savings (Figure 3-21).



In the next 5 years, another 21 percent of owners (around 200,000) 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 2014, only 35 percent of owners aged 65 to 69 took withdrawals. The need to take RMDs will essentially drive withdrawal behavior, so companies with a customer mix heavily weighted toward qualified contracts must manage their business accordingly.

In comparison with IRA annuities, 34 percent of GMIB owners aged 70 or over who funded their annuities with nonqualified money took withdrawals in 2014 (Figure 3-22). Twenty-seven percent of GMIB nonqualified owners aged 65 to 69 took withdrawals in 2014.

Figure 3-22: GMIB Withdrawals by Nonqualified Owners



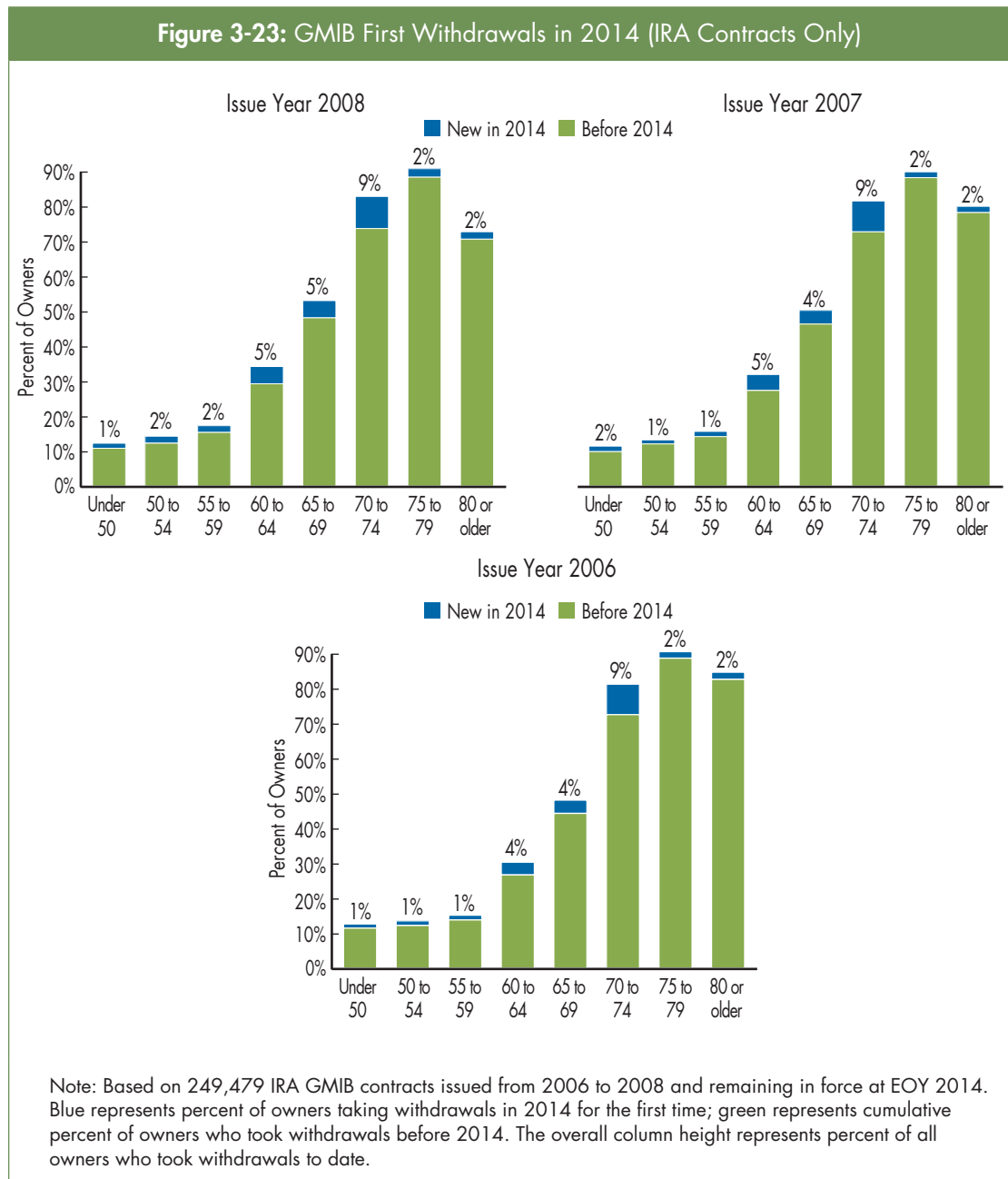
First Withdrawals

One of the value propositions for GMIB annuities is the ability to take withdrawals. To better understand owners' inclinations to take withdrawals, we have analyzed owner withdrawal behavior by considering at what age or in what year of annuity ownership the owner is likely to initiate their first withdrawal. We also look at how many continue taking withdrawals once they start doing so. Extending that logic, we might expect to find corollary relationships among other variables, like when owners decide to take their first withdrawals, whether their withdrawal amounts remain within or around the prescribed withdrawal maximum amount allowed in the contract, or whether the persistency of these contracts differs from contracts that have not had withdrawals or excess withdrawals.

Analysis of when owners are likely to take first withdrawals provides important information on the withdrawal risks of these contracts. These findings can help insurance companies to assess risk more precisely by identifying clusters of owners who are likely to start withdrawals in their first year, second year, etc. after purchase. The first withdrawal activity analysis can be done in two ways: First, we can determine the percentage of owners who initiated their first withdrawals in 2014, by age, source of money, and issue year, to provide various trends and relationships. Second, we can analyze the first withdrawal history for owners from a particular issue year, and track how age and sources of money influence their first withdrawals.

First Withdrawal From IRA Annuity in 2014

There is a distinct pattern of withdrawal behavior from IRA-funded GMIB annuities, principally driven by age and the need to take RMDs. Figure 3-23 shows the percent of owners taking their first withdrawals in 2014 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.



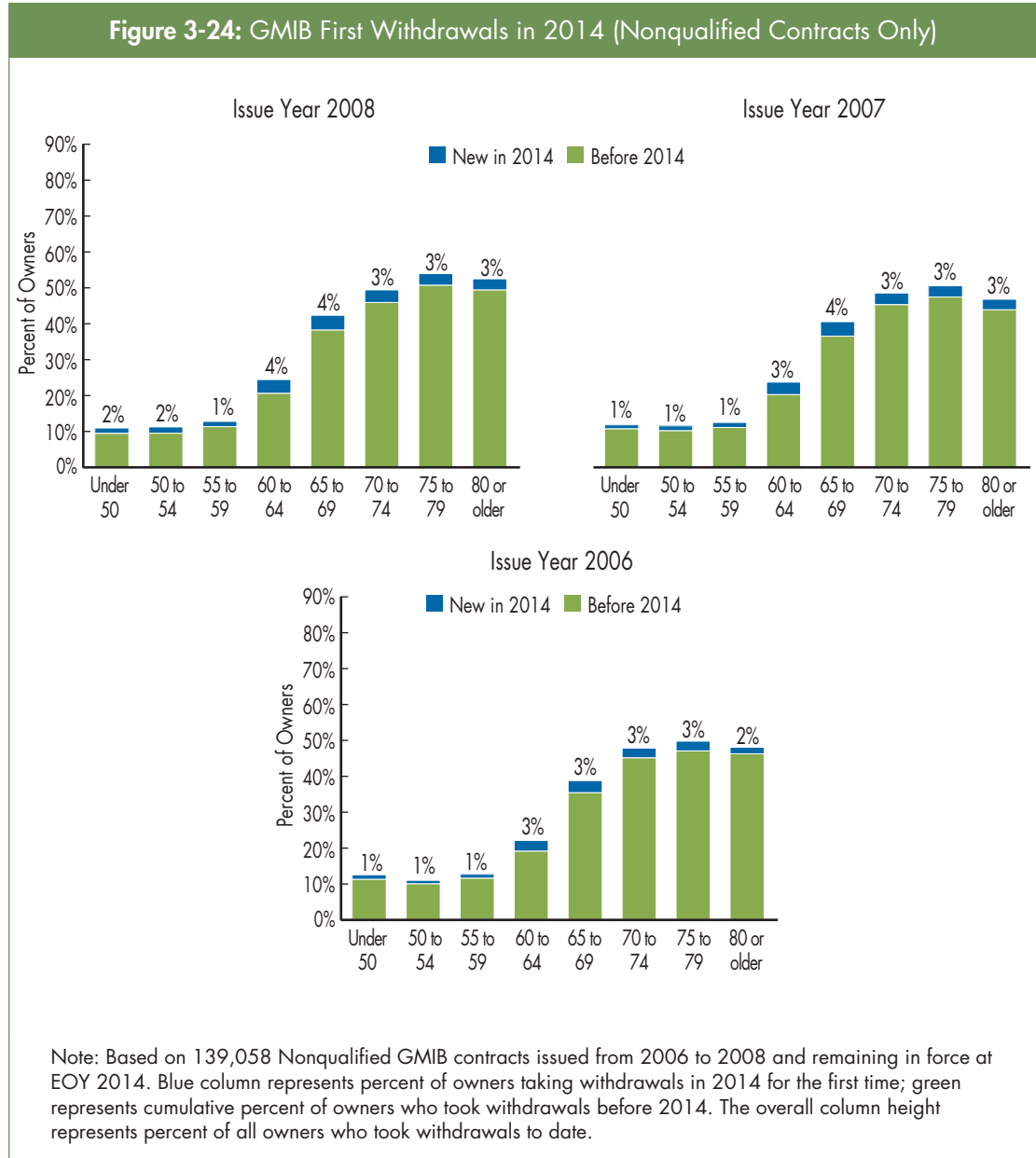
Owners who bought their annuities in 2008 had at least six years to take withdrawals. Of these owners, only a small percent under age 70 initiated their first withdrawals in 2014. The marginal increases in the percentage of owners from each age group who took first withdrawals remains relatively small — within a range of 1 to 5 percent for each age group under age 70. However, 9 percent of owners aged 70 to 74 took their first withdrawals in 2014. Almost three quarters of owners aged 70 to 74 had taken withdrawals before 2014. Previous LIMRA Secure Retirement Institute studies show that owners who turn age 71 have the highest percentage of first withdrawals due to RMDs.

9% of qualified owners aged 70 to 74 took first withdrawals in 2014.

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 pattern of first withdrawals in 2014 from GMIB contracts is remarkably similar to the pattern of first withdrawals in 2014 for GLWB owners.

First Withdrawal From Nonqualified Annuity in 2014

The percent of nonqualified GMIB annuity owners who took their first withdrawals in 2014 reflects more streamlined withdrawal behavior. Figure 3-24 shows the percent of nonqualified owners who took their first withdrawals in 2014 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 2014 increased slightly from age 55 through age 69. Only a small percent of owners under 70 took their first withdrawals in 2014 within a range of 1 to 4 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 3 percent for each age group. Just over one third of owners aged 65 to 69 had already taken withdrawals before 2014; this percentage increases to just under half 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. Four percent or fewer of the nonqualified owners took their first withdrawals each year; and the cumulative percent of these owners who took withdrawals from their GMIB contracts was around 50 percent or less.

Analysis of the seven years of first withdrawal history of 2008 owners shows some important insights:

- Overall, 1 in 10 owners of 2008 initiated their withdrawals in the same year they purchased their annuity. In the first year, the percent of owners taking withdrawals rises from ages 60 to 65, then levels off until age 70.
- The percentages of owners who took their first withdrawals in subsequent years are typically lower than in the first year, as the number of owners who have not taken withdrawals diminishes.
- Once owners initiate withdrawals, three quarters continue to take withdrawals in all subsequent years.
- More than 90 percent of 2008 owners aged 70 or above took withdrawals from their annuities in the last seven years. Across all ages, just under half of 2008 owners took withdrawals. This is particularly noteworthy because just under a third of the 2008 owners were aged 60 or under in 2014, and a majority of them are not yet in or near retirement.
- Contract benefits being greater than the benefit bases appears to have very little impact on first withdrawal behavior (addressed later in this chapter). From 2009 to the beginning of 2012, most of the GMIB contracts had benefit bases that exceeded the contract values. However, the percentage of owners taking withdrawals from their contracts does not show any deviation from the general trend, by any particular age or age groups.

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 2013, and thereafter withdrawals continued every year through 2014.

For example, 90 percent of 68-year-olds who purchased their annuities in 2008 took their first withdrawals between 2008 and 2013, and continued to take withdrawals every year through 2014. 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.

First 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, 7 to 14 percent of owners aged 60 and older took their first withdrawals. After the second year, the range is much tighter — 3 to 8 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.

Withdrawals started at		Age at Purchase																	All Ages*		
		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		5%	4%	5%																	
Age 60		5%	7%	9%	9%																
Age 61		5%	4%	5%	7%	11%															
Age 62		4%	5%	5%	5%	9%	10%														
Age 63		4%	5%	4%	5%	6%	10%	13%													
Age 64			4%	4%	5%	5%	5%	9%	13%												
Age 65				5%	5%	5%	5%	7%	10%	14%											
Age 66					5%	4%	5%	6%	6%	12%	15%										
Age 67						4%	6%	4%	6%	5%	10%	15%									
Age 68							4%	4%	5%	5%	10%	17%									
Age 69								4%	4%	4%	5%	7%	11%	19%							
Age 70									4%	5%	5%	6%	8%	11%	18%						
Age 71										4%	4%	5%	4%	6%	11%	19%					
Age 72											4%	4%	5%	5%	7%	14%	21%				
Age 73												3%	4%	5%	4%	5%	12%	20%			
Age 74													3%	5%	4%	4%	6%	14%	22%		
Age 75														5%	4%	5%	4%	6%	13%	23%	
Age 76															3%	3%	5%	4%	6%	14%	
Age 77																3%	5%	4%	5%	6%	
Age 78																	3%	3%	3%	4%	
Age 79																		3%	3%	3%	
Age 80																			3%	4%	
Age 81																				4%	
Cumulative		27%	30%	36%	40%	43%	45%	47%	47%	50%	48%	50%	52%	55%	52%	53%	54%	55%	56%	57%	35%
Percent of owners taking withdrawals in all subsequent years		69%	66%	69%	75%	76%	79%	81%	79%	77%	80%	79%	79%	79%	80%	78%	82%	79%	78%	76%	73%

Note: Based on a constant group of 25,078 contracts issued in 2008 and still in force at EOY 2014. The percent of owners taking withdrawals in all subsequent years is based on contracts where the first withdrawal occurred from 2008 to 2013, with withdrawals continuing every year through 2014.

*All ages analysis includes all ages reported, including ages not shown in the chart.

For owners in their third to seventh year of ownership, the percentage taking first withdrawals does not vary significantly across observation years. In 2014, across all ages, the percentage of owners taking withdrawals remained within a band of 3 to 7 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.

Overall, similar to IRA annuities, nearly 10 percent of owners initiated withdrawals from their nonqualified annuities in their first year of ownership.

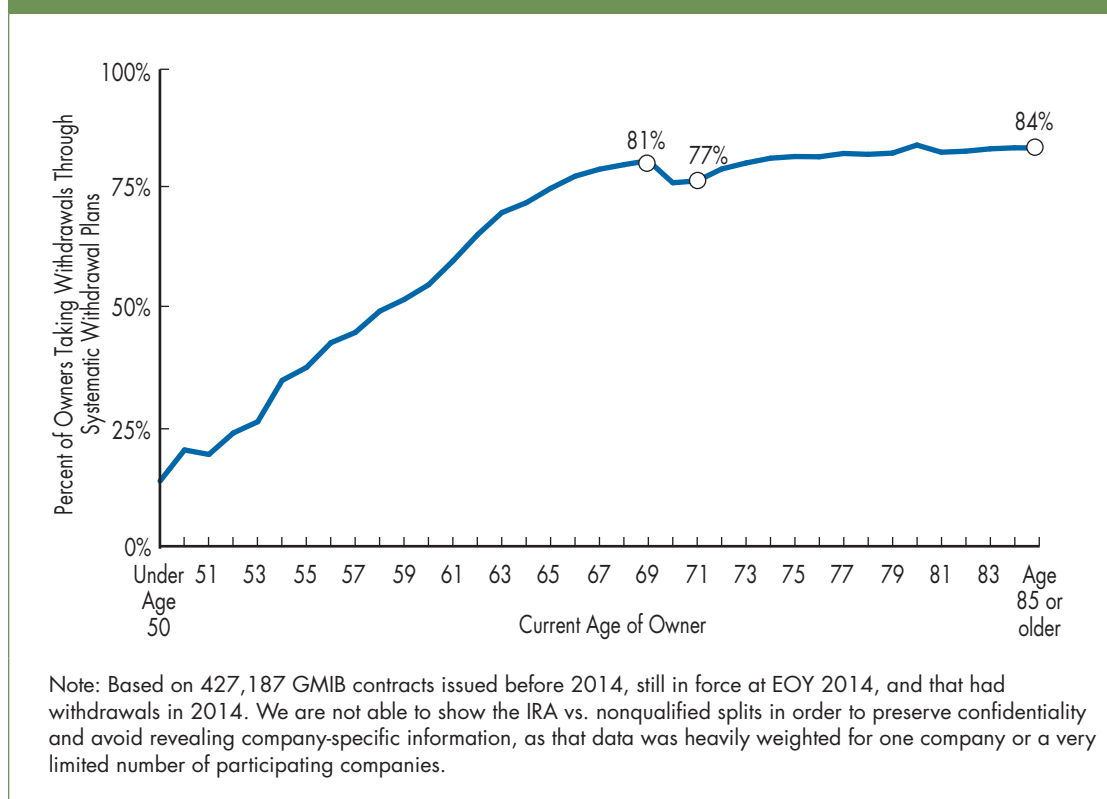
- Also like IRA annuities, once nonqualified owners start taking withdrawals nearly three quarters are very likely to continue withdrawals in all subsequent years.
- We also see little or no impact on withdrawal behavior from contracts where the benefit base exceeded the contract value during the last four years after the market crisis, when the majority of contracts had benefit base amounts that exceeded the contract values (discussed later in this chapter).

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, 3 out of 4 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 3-25). 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 under 85 percent for owners in their 80s. There is a decline around ages 70 to 71 as some GMIB IRA owners made adjustments due to RMDs.

Figure 3-25: GMIB Withdrawals With Systematic Withdrawal Plans



The median annual withdrawal amount for those taking just an SWP in 2014 was \$5,800 and the average was \$8,900. Table 3-7 shows the median withdrawal amount for owners who took only SWP withdrawals in 2014. The median withdrawal amounts for 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 relatively small percentage of contracts that had withdrawals. The average systematic withdrawal amount was \$8,700 for IRAs and \$9,400 for nonqualified contracts.

The median withdrawal amount was **\$5,800** (systematic) and **\$8,000** (occasional).

Table 3-7: GMIB Systematic Withdrawal Amounts by Age and Source of Funds

Age	Systematic Withdrawal Median Withdrawal Amount	
	IRA	Nonqualified
Under 60	\$9,439	\$8,220
Age 60–69	\$7,864	\$6,300
Age 70 or older	\$4,711	\$5,760
Total	\$5,728	\$6,000

Note: Based on 305,740 GMIB contracts issued before 2014 and still in force at EOY 2014, taking only systematic withdrawals in 2014.

For those contracts with only occasional (i.e., non-systematic) withdrawals, the median amount was \$8,000 and the average was \$17,100. For owners under age 60 taking occasional withdrawals, the median withdrawal amount was relatively high, and they are more likely to partially surrender the contracts (Table 3-8). The average occasional withdrawal amount was \$15,800 for IRAs and \$21,500 for nonqualified contracts.

Table 3-8: GMIB Occasional Withdrawal Amounts by Age and Source of Funds

Age	Occasional Withdrawals Median Withdrawal Amount	
	IRA	Nonqualified
Under 60	\$11,850	\$11,500
Age 60–69	\$10,000	\$9,249
Age 70 or older	\$5,877	\$8,000
Total	\$7,800	\$9,038

Note: Based on 106,132 GMIB contracts issued before 2014 and still in force at EOY 2014, taking only occasional or non-systematic withdrawals in 2014.

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: GMB Withdrawal Amounts as Percentage of Total Withdrawal Amount

Age	Only Occasional Withdrawals		Only Systematic Withdrawals		Both Occasional and Systematic Withdrawals		Total
	IRA	Nonqualified	IRA	Nonqualified	IRA	Nonqualified	
Under age 60	5%	3%	2%	1%	1%	0%	11%
Age 60–69	11%	4%	16%	6%	4%	1%	42%
Age 70 or older	9%	4%	20%	9%	4%	1%	47%
Total	25%	11%	38%	16%	8%	3%	100%

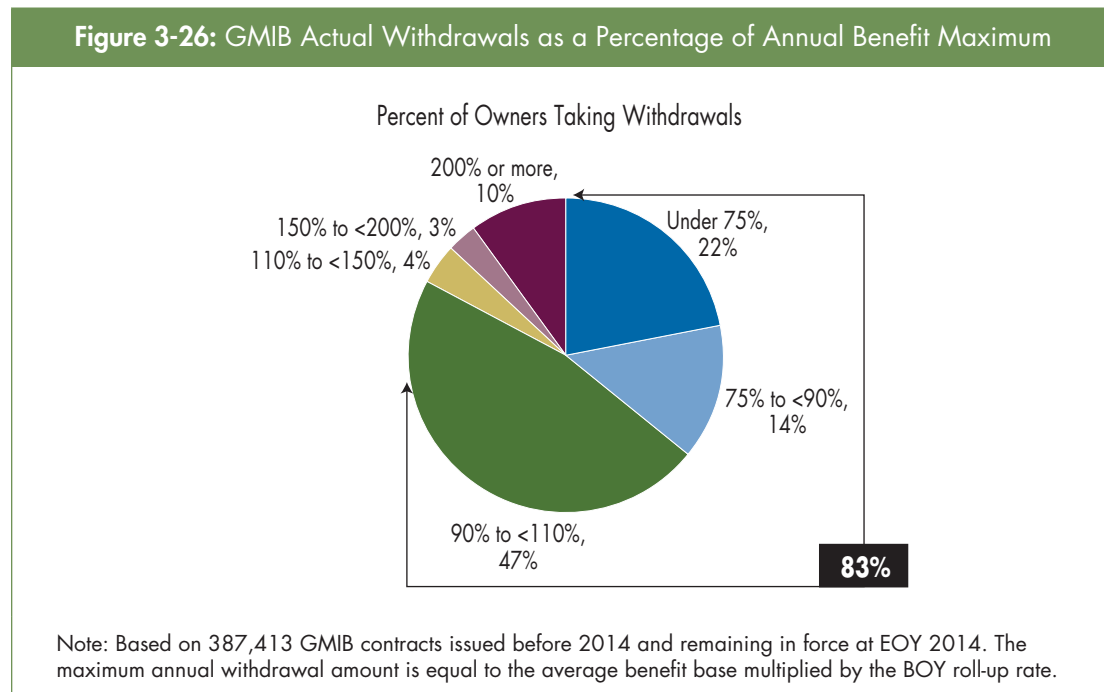
Note: Based on 433,867 GMB contracts issued before 2014 and still in force at EOY 2014 with withdrawals in 2014.

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.

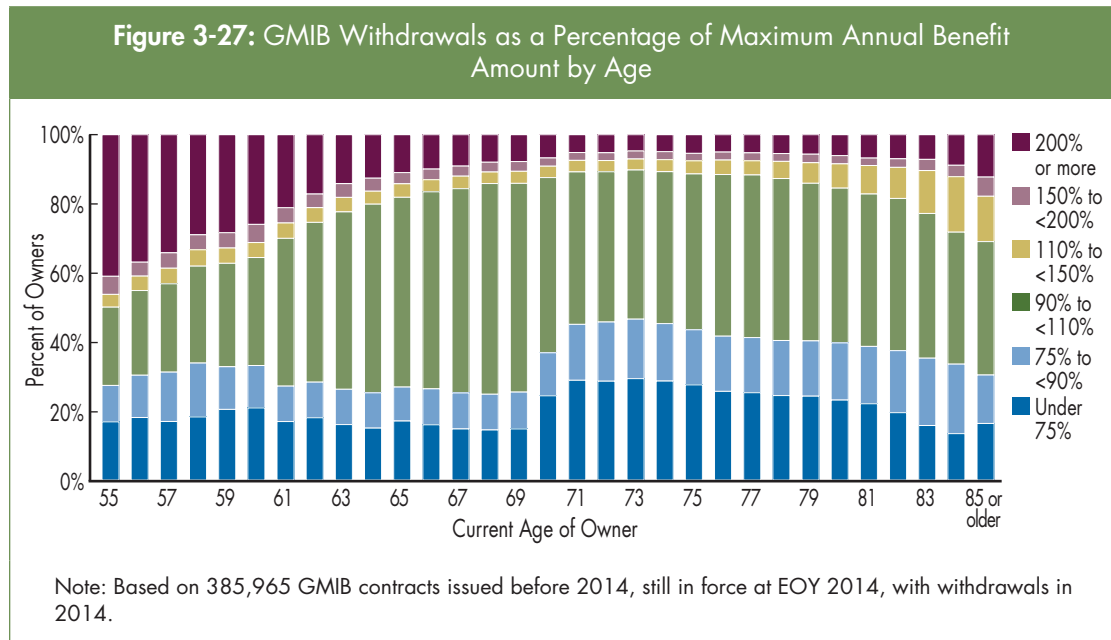
In this section, we look at the relationship of GMIB customers' actual withdrawal amounts in calendar-year 2014 to the maximum annual withdrawal amounts allowed in the contracts, which for our analysis is equal to the average benefit base multiplied by the BOY 2014 roll-up rate. There is some imprecision 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 2014 by 10 percent or more, then we considered them to have exceeded the withdrawal maximum.

Figure 3-26 shows the degree to which withdrawals are higher or lower than the maximum withdrawal amounts allowed.



Around 8 in 10 owners (83 percent) who took withdrawals took less than 110 percent of the maximum allowed. Seventeen 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 110 percent or more of the maximum amount allowed (Figure 3-27).



Salient insights from Figure 3-27:

- The majority of owners taking withdrawals, as we have seen in previous sections, are typically age 65 or older. There are few instances where these older owners break the benefit maximum rule.
- Younger owners, particularly under age 60, are more likely to take 200 percent or more of the benefit maximum allowed in the contract.

There is a noticeable increase at ages 70 and 71 in the percentage of owners taking withdrawals of less than 90 percent of the benefit maximum. This can be explained by the need to take minimum withdrawals under RMDs, which are typically at a lower withdrawal rate. See Figures C3-1 and C3-2 in Appendix C for splits of Figure 3-27 by IRA and nonqualified contracts.

In addition, withdrawal amounts for 61 percent of owners who took withdrawals in 2014 remained within 75 to less than 110 percent of the benefit maximum allowed (Table 3-10). Twenty-two percent of the owners withdrew less than 75 percent; and 13 percent exceeded 150 percent or more of the benefit maximum allowed in the contracts. Only 4 percent of owner withdrawals fell within 110 to less than 150 percent of the maximum allowed.

Only **15 percent** of owners aged 60 or over took withdrawals of 110 percent or more of the maximum amount allowed.

Out of the owners under age 60, 48 percent took withdrawals that exceeded 150 percent or more of the benefit maximum, and most took 200 percent or more. It is likely that many of these individuals are partially surrendering their contracts. On the other hand, out of the owners aged 60 or older, only 11 percent took withdrawals that exceeded 150 percent or more of the benefit maximum. Many contracts do 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 for owners to begin withdrawals from qualified contracts if they haven't already started them. However, there is a noticeable change in the withdrawal pattern at age 70, when 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 owners taking out less than the maximum declines.

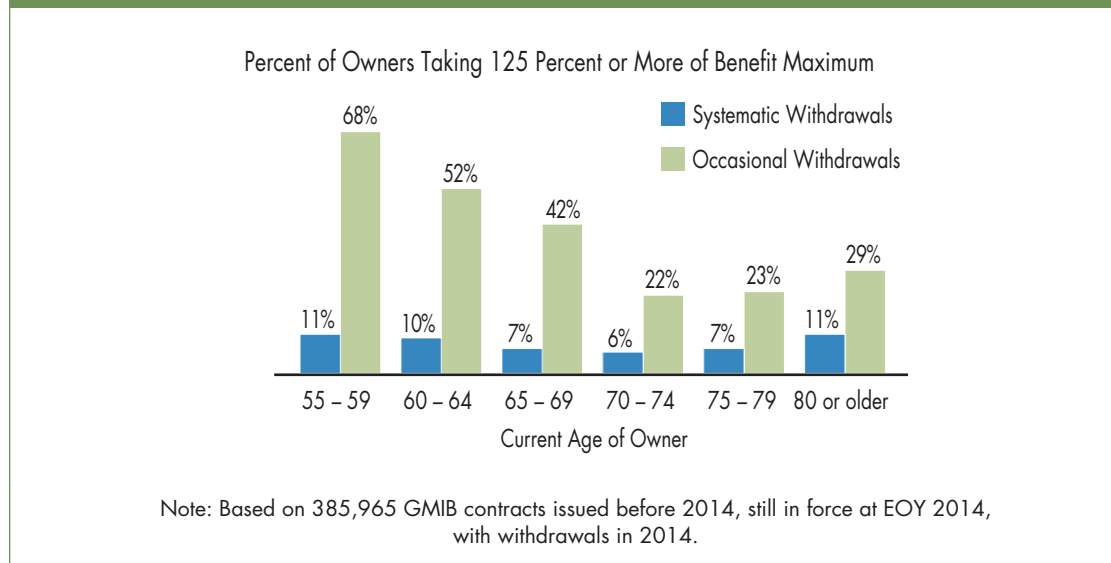
Table 3-10: Percentage of GMIB Owners Taking Withdrawals as Percentage of Benefit Maximum

Age	Withdrawal Amount as Percent of Annual Benefit Maximum Allowed in the Contract					
	Less than 75%	75% to <90%	90% to <110%	110% to <150%	150% to <200%	200% or more
55 to 59	18%	13%	27%	4%	4%	33%
60 to 64	17%	10%	47%	4%	4%	17%
65 to 69	15%	10%	59%	4%	3%	9%
70 to 74	28%	16%	45%	3%	2%	5%
75 to 79	26%	16%	46%	4%	2%	5%
80 to 84	20%	18%	43%	9%	3%	7%
85 or older	16%	14%	39%	13%	6%	12%
All ages	22%	14%	47%	4%	3%	10%

Note: Based on 385,965 GMIB contracts issued before 2014 with withdrawals in 2014.

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 3-28).

Figure 3-28: GMIB Withdrawals to Benefit Maximum Amount by Withdrawal Method and Age



Six out of ten (61 percent) contracts with excess withdrawals (125 percent or more of the benefit maximum) came from occasional withdrawals. Around 4 in 10 occasional withdrawals (39 percent) exceeded 125 percent or more of the benefit maximum. On the other hand, only 8 percent of contracts using SWPs exceeded 125 percent or more of the maximum annual income allowed. Owners using SWPs, who withdraw at or below the benefit maximum, are quite consistent across all age groups. Even withdrawals between 110 to 125 percent of benefit maximum account for only another 2 percent of SWP users. Three quarters of 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 3-29 and 3-30 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 2014 were not as likely to take withdrawals that were less than 90 percent of the maximum annual amount. For example, 15 percent of the owners under age 60 with contract sizes under \$100,000 took less than 90 percent of their maximum amount allowed compared to 31 percent for those with contract values of \$100,000 to \$249,999.

We see the opposite for those taking withdrawals of 150 percent or more. Two thirds of owners under age 60 with contract sizes below \$100,000 took withdrawals of 150 percent or more of their maximum amount, compared with 38 percent of owners under age 60 with contract values of \$100,000 to \$249,999. Those with contract values of \$250,000 or more followed a similar trend.

As noted earlier, the relationship between inefficiency and contract size is typically limited to 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, 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.

GMIB owners with higher contract values are less likely than those with lower contract values to significantly exceed the benefit maximum.

Figure 3-29: GMIB Withdrawals to Annual Benefit Maximum Amount by Age, Contract Sizes Under \$100,000

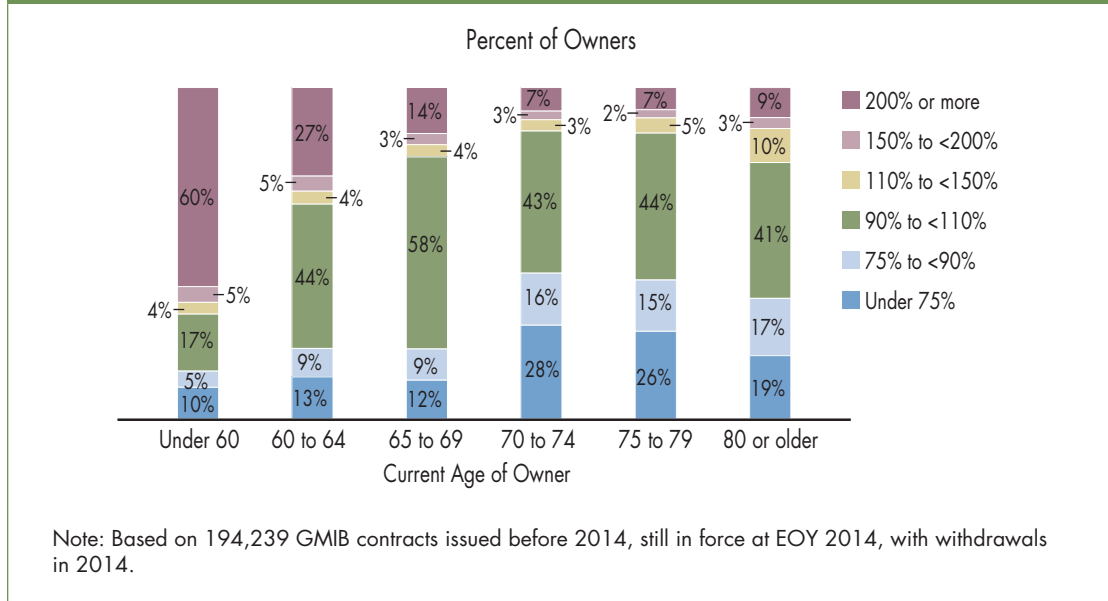
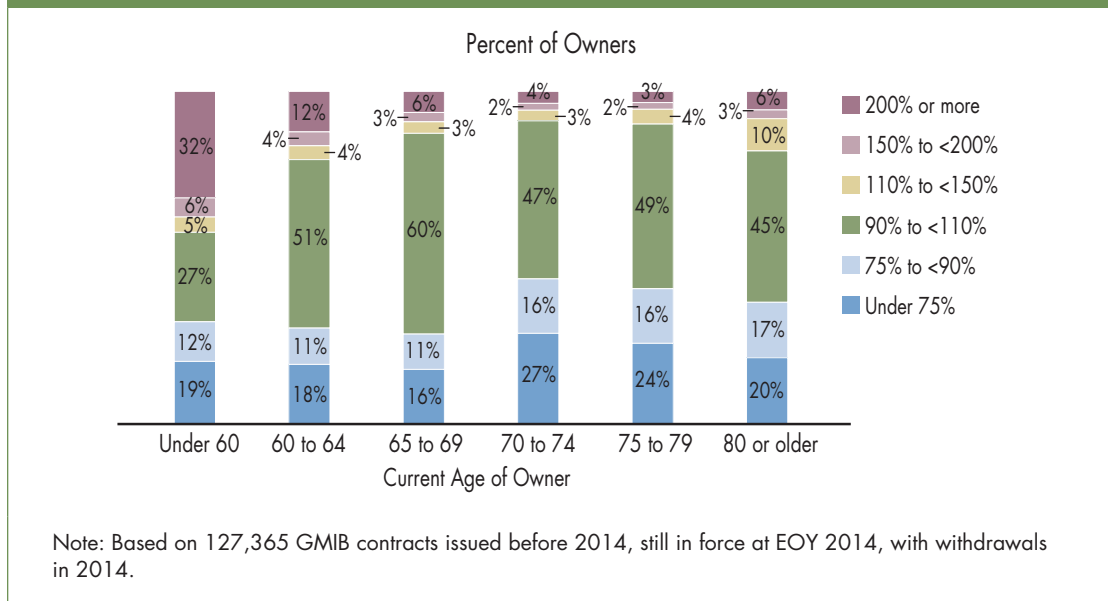


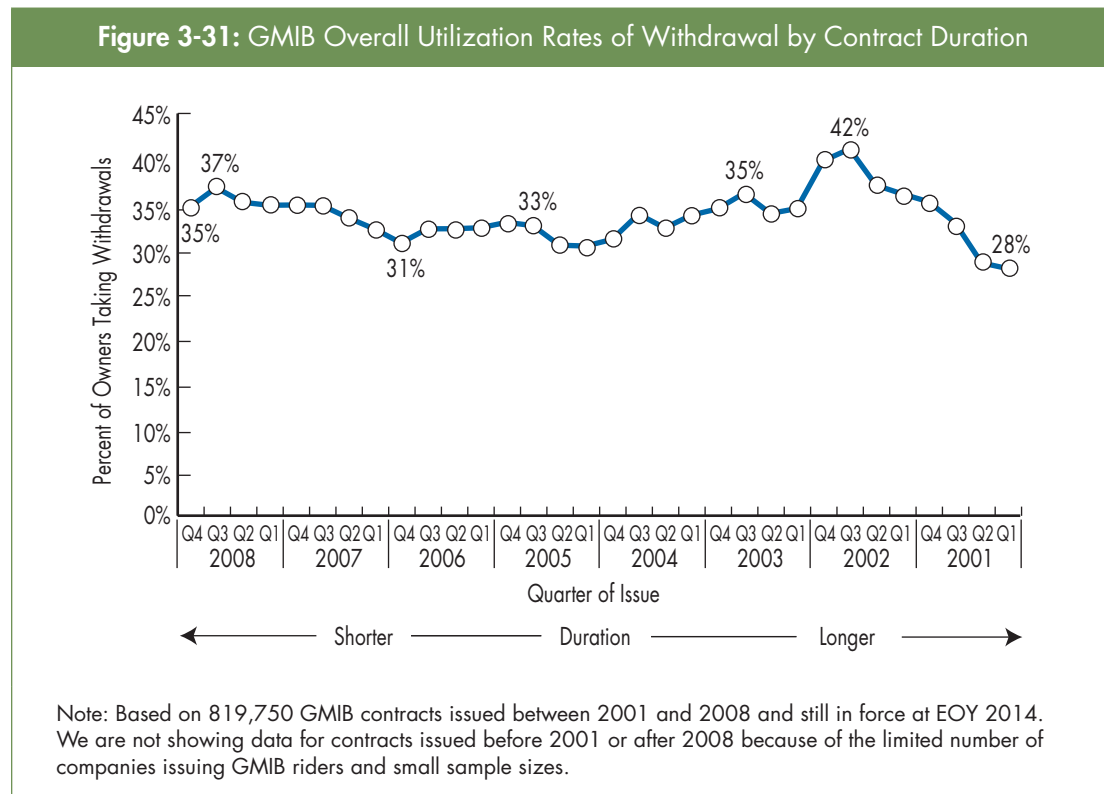
Figure 3-30: GMIB Withdrawals to Annual Benefit Maximum Amount by Age, Contract Sizes \$100,000 to \$249,999



Withdrawal Activity by Duration

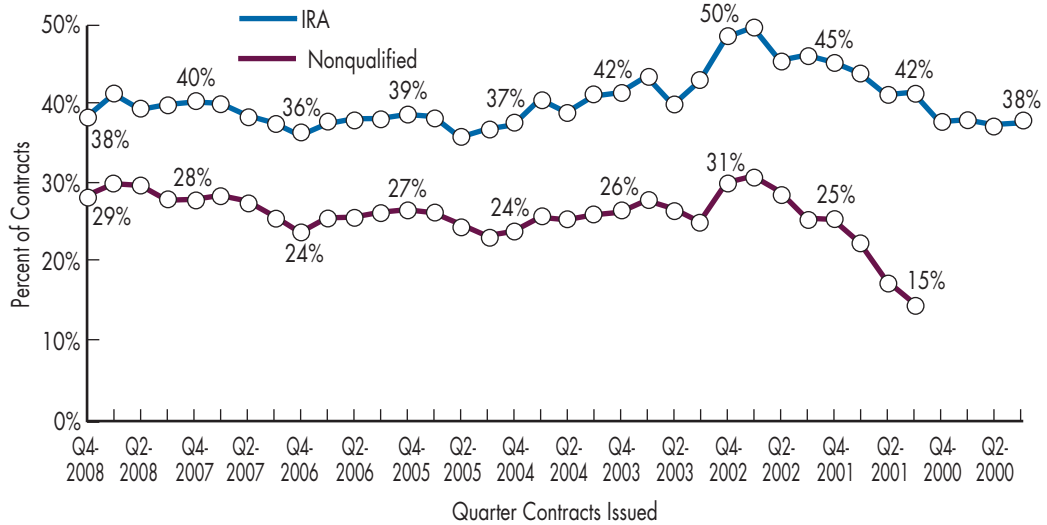
Contract duration is an important measure for evaluating what proportion of owners takes withdrawals from their annuities. By comparing their own withdrawal activity by contract duration with that of the industry, companies can assess the extent to which their customers' withdrawal patterns match both 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 28 to 42 percent for contracts issued between 2001 and 2008 and still in force at EOY 2014. Withdrawal activities in longer-duration GMIB contracts were comparatively lower than those in GLWB contracts (Figure 3-31).



How do the overall utilization rates by contract duration periods differ for qualified and nonqualified contracts? For qualified owners, the withdrawal pattern remained around 36 to 41 percent for IRA contracts issued after 2003, while contracts issued in 2003 or earlier had withdrawal rates in the 37 to 50 percent range (Figure 3-32). Nonqualified contracts also had a relatively level withdrawal pattern for contracts issued after 2001 — around 25 to 30 percent. However, for nonqualified contracts issued in 2001, the withdrawal rates dropped to around 15 percent by Q1 2001.

Figure 3-32: GMB Overall Utilization Rates by Contract Duration and Source of Funds

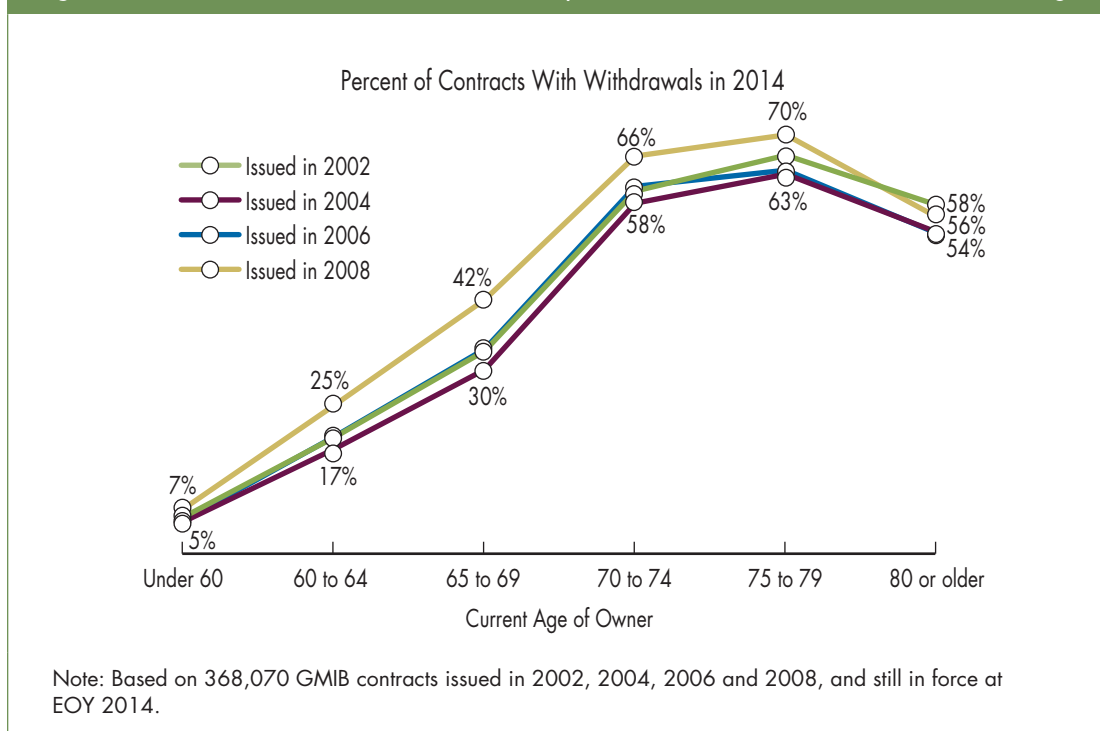


Note: Based on 791,792 GMB contracts issued from 2000 to 2008 and still in force at EOY 2014. We are not showing certain data points, or any other data for contracts issued before 2000 or after 2008 because of the limited number of companies issuing GMB riders and small sample sizes.

Withdrawal Activity by Duration and Age

We analyzed withdrawal activity by contract duration and owner age (Figure 3-33). 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 3-33: GMIB Overall Utilization Rates by Contract Duration and Current Owner Age



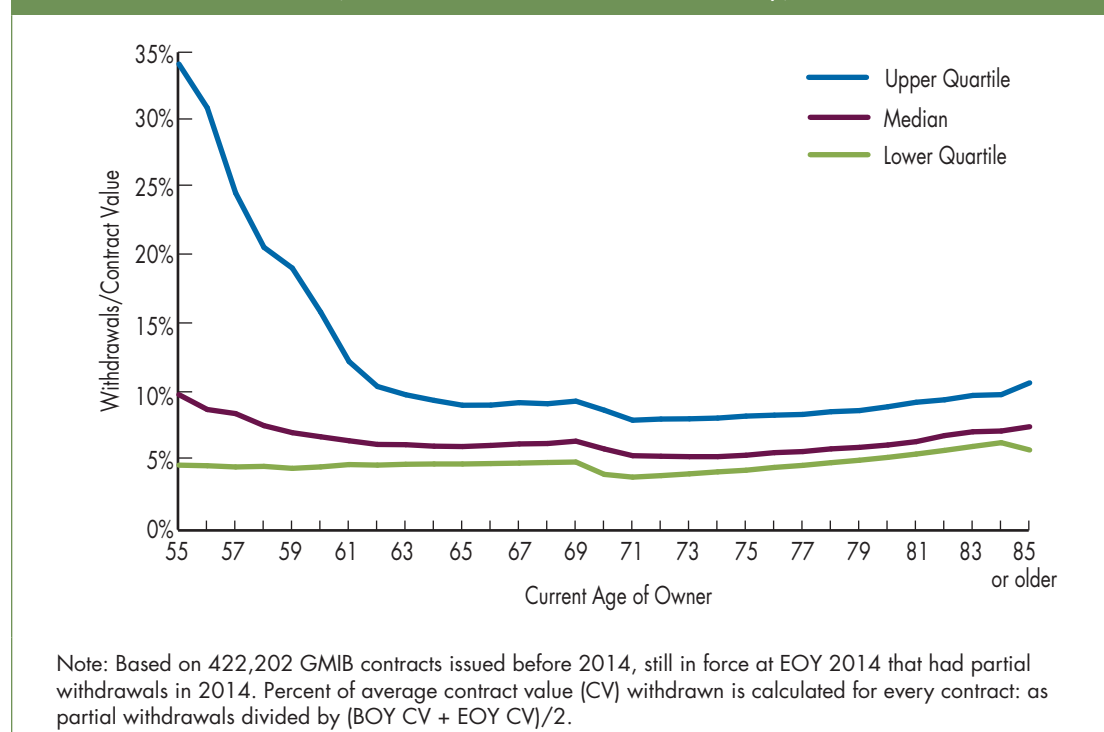
From ages 60 to 79, withdrawal activity increases, as owners begin to retire or need to make withdrawals to satisfy RMDs. For example, for contracts issued in 2008 the overall withdrawal rate increases to 66 percent for owners aged 70 to 74. Withdrawal rates peak for ages 75 to 79 and then decrease 8 to 14 percentage points for ages 80 and older. We found a very similar pattern for contracts issued in 2002 to 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.

Mapping the duration of contracts by age group can improve understanding of GMIB customer withdrawal behavior — as it follows a fairly consistent pattern.

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 values. Figure 3-34 shows the median and inter-quartile range for withdrawal amount 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.

Figure 3-34: GMB Withdrawals to Average Contract Value Ratio (For Contracts With Withdrawals Only)



The median withdrawal amount was **\$6,300** for contracts issued before 2014 and in force at EOY 2014.

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, the median was around 5 to 7 percent. For owners under age 60, the median of the ratios is higher than that of older owners, ranging from 7 to 10 percent, with the highest ratios among younger owners. In addition, 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.

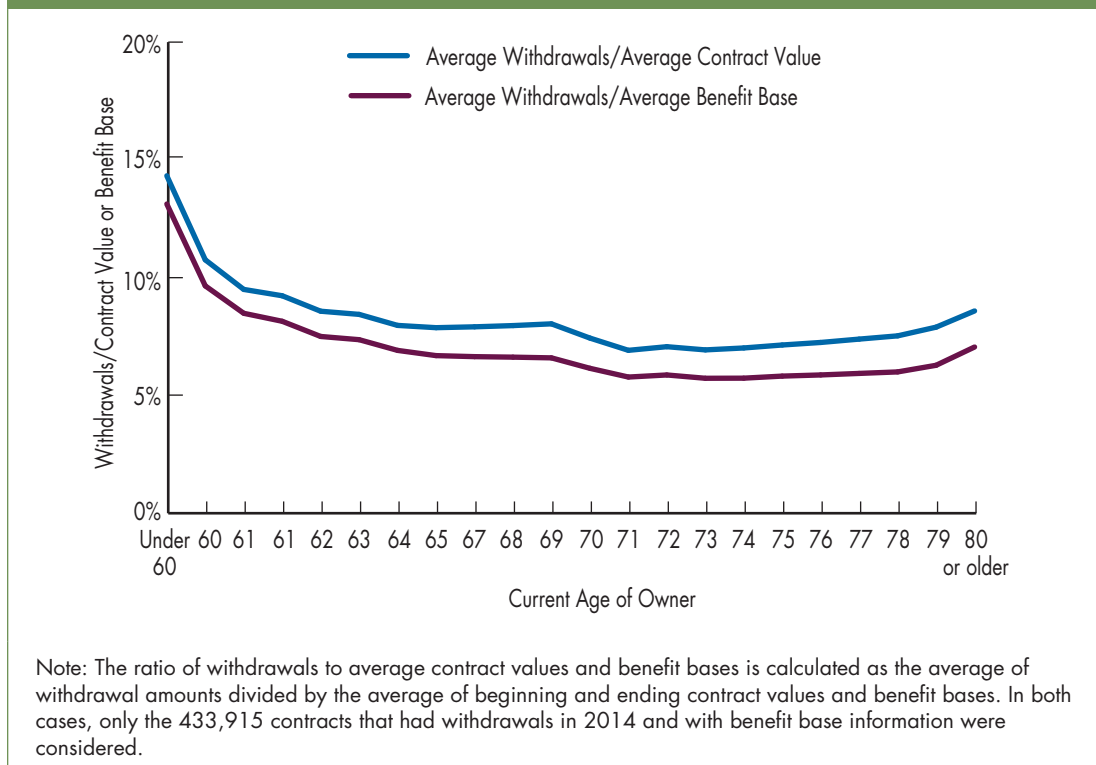
Ratio of Withdrawal to Contract Value and to Benefit Base (for Contracts With Withdrawals Only)

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 bases (Figure 3-35). The average difference between the ratios is around one to two percentage points, for GMIB owners aged 60 to 80. For owners under age 60 who took withdrawals, the ratios of their 2014 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.

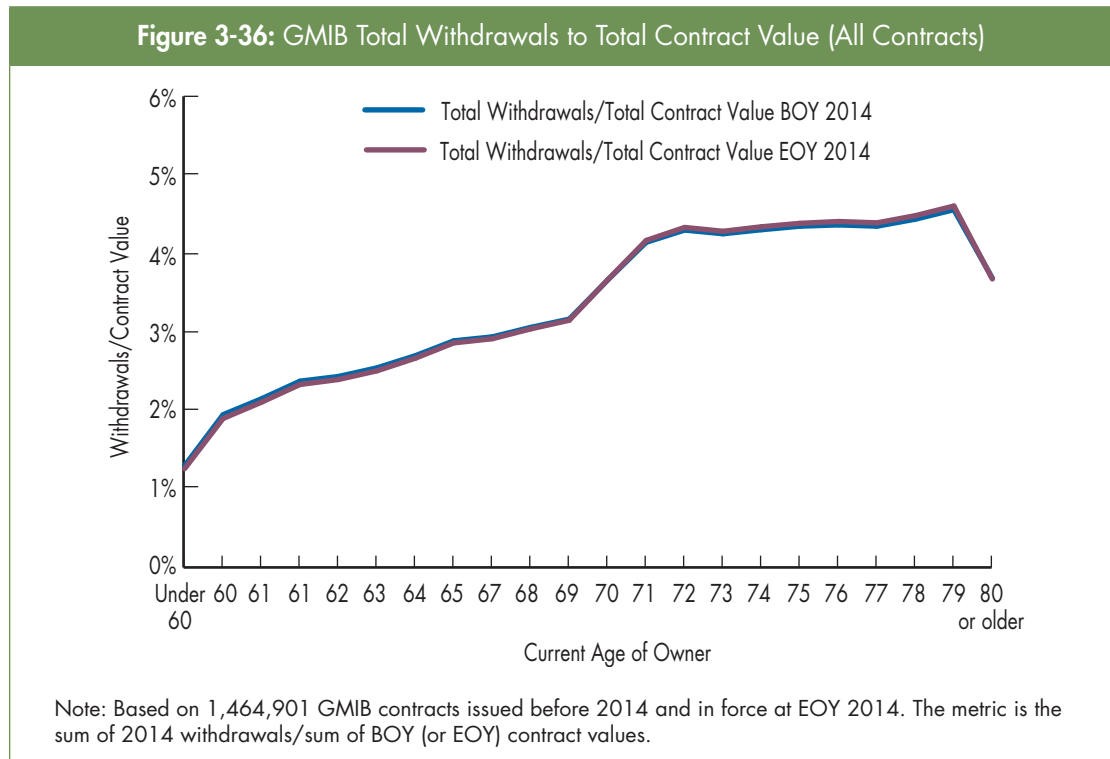
Figure 3-35: GMIB Ratio of Withdrawal Amount to Average Contract Value and to Benefit Base



Ratio of Withdrawal Amount to Contract Value

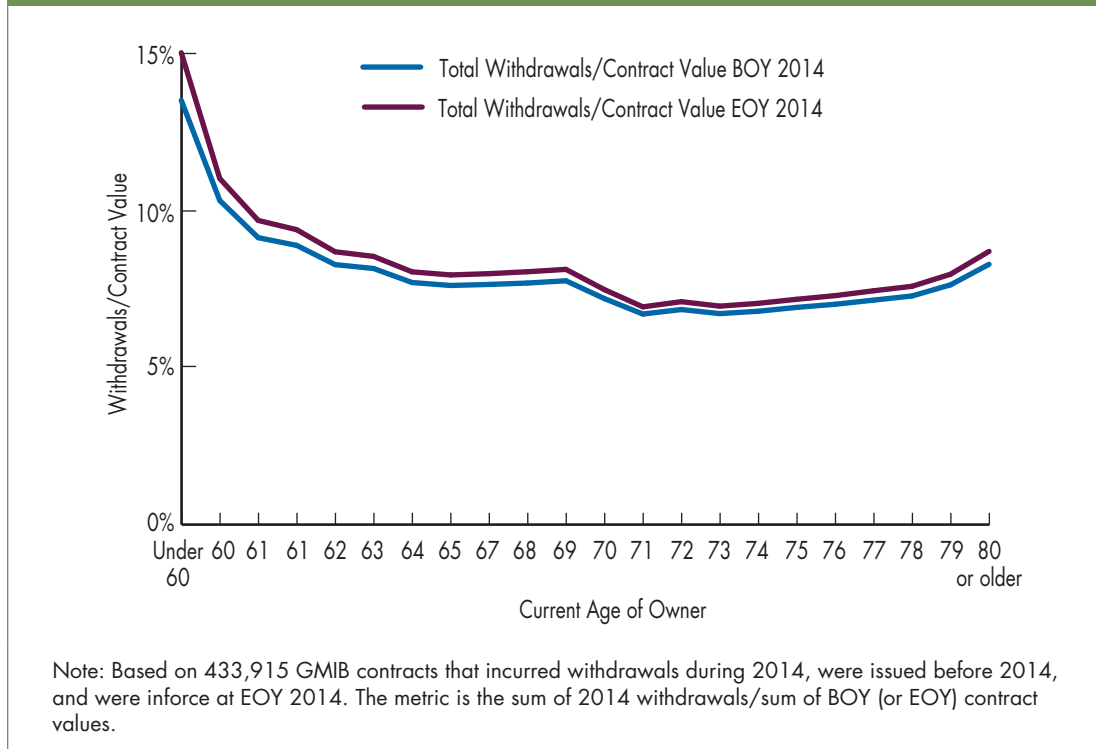
Another measure of withdrawal risk in GMIB riders originating in customer behavior can be ascertained by comparing the ratio of withdrawal amount to BOY contract value and the ratio of withdrawal amount to EOY contract value. This measure can be calculated two ways. First, total withdrawals in 2014 can 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 2014. 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 2.8 percent — the same as the corresponding ratio for EOY contract values. Across all ages, the ratio of total withdrawals to total contract values remained virtually the same in 2014, due to the limited investment growth experienced (Figure 3-36).



For GMIB contracts that had withdrawals, the rate of withdrawals or cash outflow ratio in relation to contract values at BOY was 7.9 percent (Figure 3-37). Contracts that had withdrawals in 2014 experienced an increase in their ratio of withdrawals to contract values by EOY (8.3 percent) because withdrawals more than offset any investment gains.

Figure 3-37: GMIB Total Withdrawals to Total Contract Values (For Contracts With Withdrawals)



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 contract 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, (24 percent for GLWB vs. 30 percent for GMIB).
- As a result, the ratio of withdrawals to contract values is higher in GMIBs (7.9 percent of BOY contract value) than in GLWBs (7.3 percent of BOY contract 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 the waiting period. The risk management for these riders is very different, despite similar owner behavior.

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

There are multiple ways to measure in-the-moneyness. One method is to compare the benefit base to the contract value. This method is used in this section of the report. Another method is to compare the value of the income stream that can be generated from the GMIB to the income that can be generated from the contract value. This method can be found in the “In-the-Moneyness” section of this chapter.

GMIB contract benefits being in-the-money had little influence on withdrawal behavior.

GMIB riders were the first GLB riders introduced so they tend to have older duration contracts that were severely affected by the equity market crisis of 2007 to 2008. At the beginning of 2014, almost six years after the crisis, just under two thirds of GMIB contracts had benefit bases that were still higher than the contract values. By the end of 2014, over 80 percent of GMIB contracts remained in-the-money, more than any other type of GLB contract. As stated in the beginning of this section, GMIB contracts issued around the crisis had enriched withdrawal features that could be utilized before annuitization, similar to the withdrawal benefits in GLWB contracts. This raises the question: Does a contract being in-the-money impact withdrawal activities? This in-the-moneyness analysis refers to simple analysis of contracts when the benefit bases exceed the contract values.

In order to conclude that in-the-moneyness has a major influence on withdrawal activities for GMIB contracts, we must consider the same issues as we did for other GLBs. If the incentive for owners to exercise their options to take guaranteed withdrawals from their

contracts is particularly compelling when GMIB contracts are in-the-money, then we should see increased withdrawal activity irrespective of owner age.

We cannot furnish an analysis of withdrawal activities where we isolate contracts based on in-the-moneyness, because of the limitations of low sample size, or the need to preserve confidentiality to avoid revealing any company-specific information, as age or issue-year-specific data were heavily weighted by a limited number of companies. However, we can summarize some of the broad findings from our analysis to demonstrate that in-the-moneyness has very little influence on withdrawal activities in GMIB contracts.

For GMIB contracts issued before 2014, we see that:

- Older duration contracts are more likely to be in-the-money (Figure 3-3). The older duration contracts, particularly those issued before 2007, are more likely to have a higher representation of older owners, and the more recently issued contracts are more likely to have a higher proportion of younger owners.
- At the beginning of 2014 the amount that benefit bases were in-the-money was not widely spread across all age groups (Figure 3-7). In fact, contracts owned by individuals aged 70 or older were more likely to be deeper in-the-money than younger owners. This is because large numbers of older owners from older duration contracts had already initiated withdrawals in previous years and continued to take withdrawals from their contracts in all following years.
- Since older owners — particularly those aged 70 or older — are more likely to take and continue withdrawals from their GMIB contracts over a longer period of time (Tables 3-5 and 3-6), and a majority of their withdrawal amounts remain within the maximum amount offered in the GMIB contracts (Figure 3-28), their contract values are likely to decline over time while the GMIB benefit bases are likely to remain level. As a result, these contracts become more in-the-money as the withdrawals continue.

Our analysis shows that the percent of owners aged 60 or older who took withdrawals in 2014 was higher among GMIB contracts that were in-the-money compared with those not in-the-money. Also, the gap between the percent of owners taking withdrawals in contracts that were in-the-money increases with older age groups compared with owners not-in-the-money. For example, 53 percent of owners aged 80 or older with contracts in-the-money took withdrawals, compared with 39 percent of owners with contracts not-in-the money.

The percent of owners aged 59 or younger who took withdrawals in 2014 was lower for GMIB contracts not-in-the-money than for contracts in-the-money. Nearly one third of all GMIB contracts are held by this age segment and a majority of them were in-the-money at BOY. Also, the percent of owners taking withdrawals in 2014 ranged from 4 to 8 percent.

These facts offer strong evidence that in-the-moneyness does not greatly influence withdrawal behavior. If it did, then owners under age 60 would have been more active in taking withdrawals, and we would have seen accelerated withdrawal activities in contracts that were in-the-money, or a sudden jump in withdrawal activities compared to previous years.

In a separate analysis last year of withdrawals in GMIB contracts by in-the-moneyness, controlled for year of issue, we found the following:

- More GMIB owners took withdrawals from older duration contracts. As owners reached age 70½, a larger number took 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 in-the-moneyness, for shorter-duration contracts.
- We also observed that the vast majority of owners under age 60 who bought their contracts long before the market crisis did not experience any accelerated withdrawal activities, even though 9 out of 10 of these GMIB contracts were in-the-money at BOY. The percentage of these owners who took withdrawals when their contracts were not-in-the-money is low — 5 to 8 percent — but comparatively higher than owners who were in-the-money.

Nearly 8 out of 10 GMIB owners who took withdrawals before 2014 continued to take withdrawals in 2014.

Among GMIB owners who took withdrawals prior to 2014 and whose contracts were in force year-end 2014, 79 percent had withdrawal activity in 2014. There is a small portion of owners under age 70 who start their withdrawals immediately or a short time after their GMIB annuity purchase. Once owners take their first withdrawals and continue to take withdrawals in subsequent years, their contracts are likely to

remain in-the-money. Simply put, owners who start withdrawals are likely to continue withdrawals in subsequent years irrespective of in-the-moneyness; and, this influences the data showing that more owners may be withdrawing when they are in-the-money. As owners continue their withdrawals, it is also likely these contracts will remain in-the-money even without a positive equity market.

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

- Our analysis of the timing of first withdrawals among contracts issued in 2008 (Tables 3-5 and 3-6) provides further evidence that in-the-moneyness is not a strong determinant of withdrawal activity. Over a 7-year period, most of these contracts were exposed to different degrees of in-the-moneyness, especially between 2009 and 2013. Yet we did not observe any significant 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 to 2010, 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 caused many contracts to start 2012 deeply in-the-money. Instead, attained age and the need for RMDs for IRA contracts explained much of the withdrawal pattern that we observed. Also, the first withdrawal activity patterns among nonqualified GMIB annuity owners does not show any major shift over the past few years.
- We should note that 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 recent years.

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 2014 (Table 3-11).

Table 3-11: GMIB Withdrawals by Select Characteristics

	Unweighted		Weighted by BOY 2014 Contract Value	
	Partial Withdrawals	Systematic Withdrawals	Partial Withdrawals	Systematic Withdrawals
Age of owner				
Under 50	4%	1%	6%	2%
50 to 54	5%	1%	8%	4%
55 to 59	8%	4%	12%	7%
60 to 64	19%	13%	26%	19%
65 to 69	32%	25%	38%	31%
70 to 74	58%	46%	60%	47%
75 to 79	61%	50%	62%	49%
80 or older	48%	39%	44%	34%
Market type				
IRA	34%	25%	40%	30%
Nonqualified	22%	17%	26%	20%
Gender				
Male	30%	23%	36%	28%
Female	29%	22%	34%	26%
Contract value, EOY 2014				
Under \$25,000	22%	14%	30%	17%
\$25,000 to \$49,999	28%	21%	31%	22%
\$50,000 to \$99,999	31%	23%	33%	25%
\$100,000 to \$249,999	32%	25%	34%	27%
\$250,000 to \$499,999	36%	28%	37%	29%
\$500,000 or higher	35%	27%	36%	27%
<p>Note: Based on 1,475,106 GMIB contracts issued before 2014 and still in force at EOY 2014. 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.</p>				

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 2014 and still in force at EOY 2014:

- Three percent received additional premium in 2014. Contracts issued in 2013 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, 6 percent of owners under age 50 added premium, compared with less than 1 percent of owners aged 70 or older. Four percent and 2 percent of owners aged 50 to 59 and aged 60 to 69 respectively, added additional premium to their contracts in 2014.
- Contracts owned by men and women were equally likely to receive additional premium (3 percent).
- IRA and nonqualified contracts were equally likely to receive additional premium (3 percent).
- Eleven percent of a constant group of contracts that were issued in 2008 added additional premium in 2009; roughly 4 to 7 percent added additional premium each year for 2010 through 2012, and only 1 percent in 2013 and 2014.

Premiums received for newly issued and existing contracts were below the outflows associated with withdrawals, surrenders, deaths, and annuitizations — \$6.3 billion and \$11.9 billion, respectively (Table 3-12). The total number of GMIB in-force contracts declined slightly during 2014. At EOY 2014, GMIB assets were \$191.0 billion, 1 percent lower than the \$192.7 billion at BOY 2014.

Table 3-12: GMIB Net Flows

	Dollars (Billions)	Contracts	Average Contract Size
In-force, BOY 2014	\$192.7	1,561,847	\$123,385
Premium received	\$6.3		
Benefits paid			
Partial withdrawals	\$5.6		N/A
Full surrenders	\$4.7	66,345	\$70,515
Annuitizations	\$.6	9,229	\$69,051
Death/Disability	\$1.0	11,146	\$88,003
Investment growth	\$3.9		N/A
In-force, EOY 2014	\$191.0	1,515,181	\$126,084

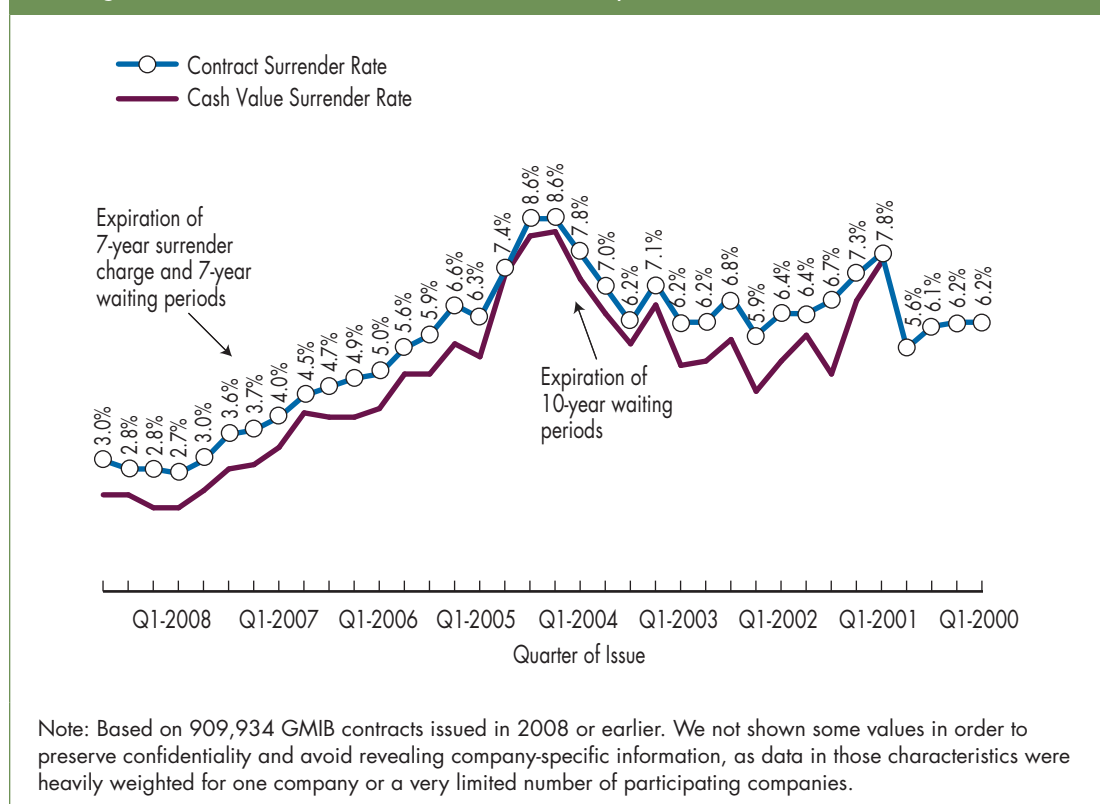
Note: Based on 1,601,901 GMIB contracts in the study.
N/A=Not available.

Premium received = newly issued contracts + premium into existing contracts. Dollar values for contracts issued before 2014 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 2014 that terminated during the year were set equal to the current-year premium. 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.

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 contract values, can have an impact on product profitability and the reserve requirements for insurance companies.

Figure 3-38: GMIB Surrender Rates in 2014 by Quarter and Year of Contract Issue



Overall surrender rates for VAs with GMIBs in 2014 were higher than surrender rates for VAs with GLWBs — 4.3 percent vs. 3.6 percent — and lower than the 8.2 percent for GMWBs. However, the comparison to GLWBs reflects the older GMIB contract base — just under half (45 percent) of which were issued in 2007 or before, thus completing at least 7 years of holding periods — so that by 2014 most of these contracts were free of surrender charges. The surrender rate among contracts issued in 2006 or before was 5.8 percent (Figure 3-38). Contracts issued from 2001 through 2004 had the highest surrender rate — around 6 to 9 percent. Moreover, the difference between surrender rates based on contract values (3.4 percent) and those based on contract counts (4.3 percent) is relatively large for GMIB business, which indicates that smaller-than-average contracts are more likely to be surrendered.

2014 GMIB contract surrender rates were **4.3%**

Surrender Activity by Share Class

The surrender rates for contracts where surrender charges existed are low.

Persistency among contracts with surrender charges is much higher than among contracts without surrender charges. The surrender rates for B-share contracts where surrender charges expired in previous years was almost double that for L-share contracts (Figure 3-39). The surrender rates for contracts where surrender charges expired in 2014 were 7.6 percent for B-share contracts. The surrender rates for contracts in both share classes where surrender charges existed was approximately one third the surrender rates for contracts where the surrender charge had expired in previous years. Fifty-eight percent of B-share contracts were still within the surrender charge period in 2014. B-share contracts constituted 77 percent of contracts. In general, cash value surrender rates were roughly ½-1 percentage point below the contract surrender rates (Figure 3-40).

Figure 3-39: GMI Contract Surrender Rates by Share Classes

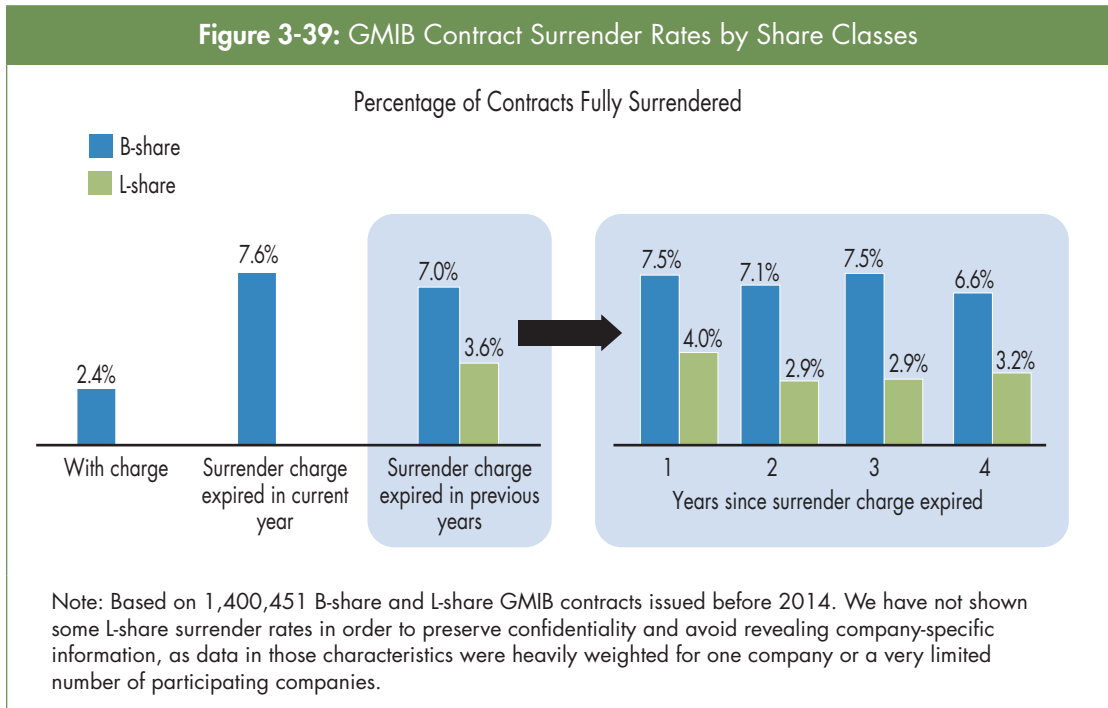
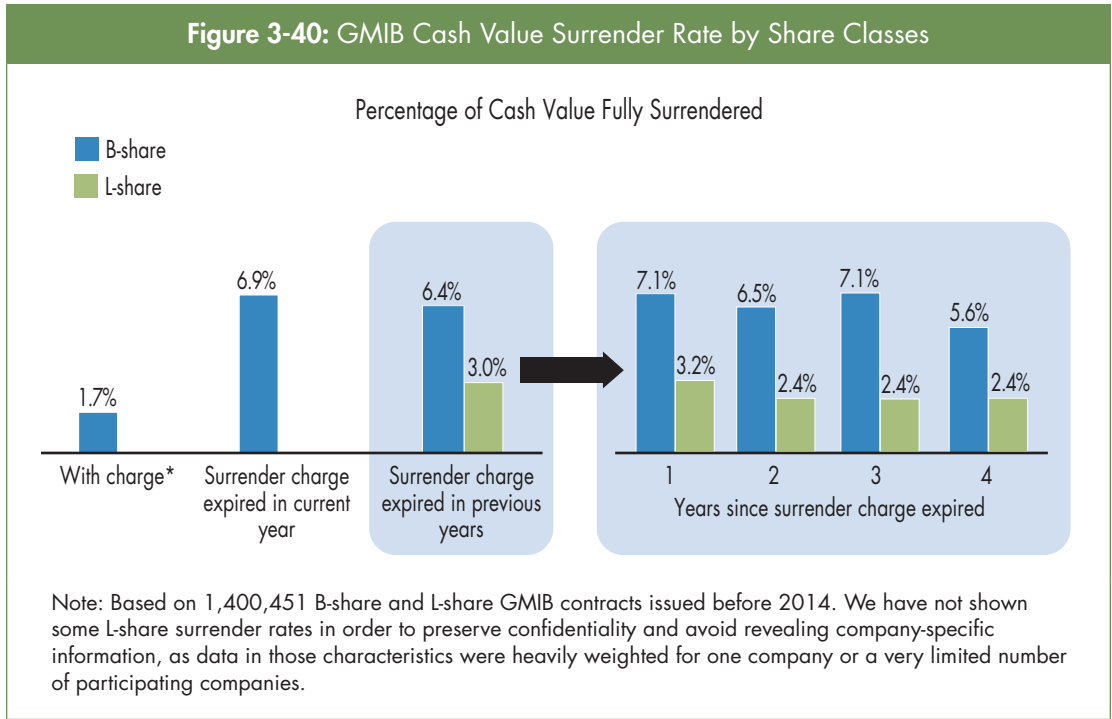


Figure 3-40: GMIB Cash Value Surrender Rate by Share Classes

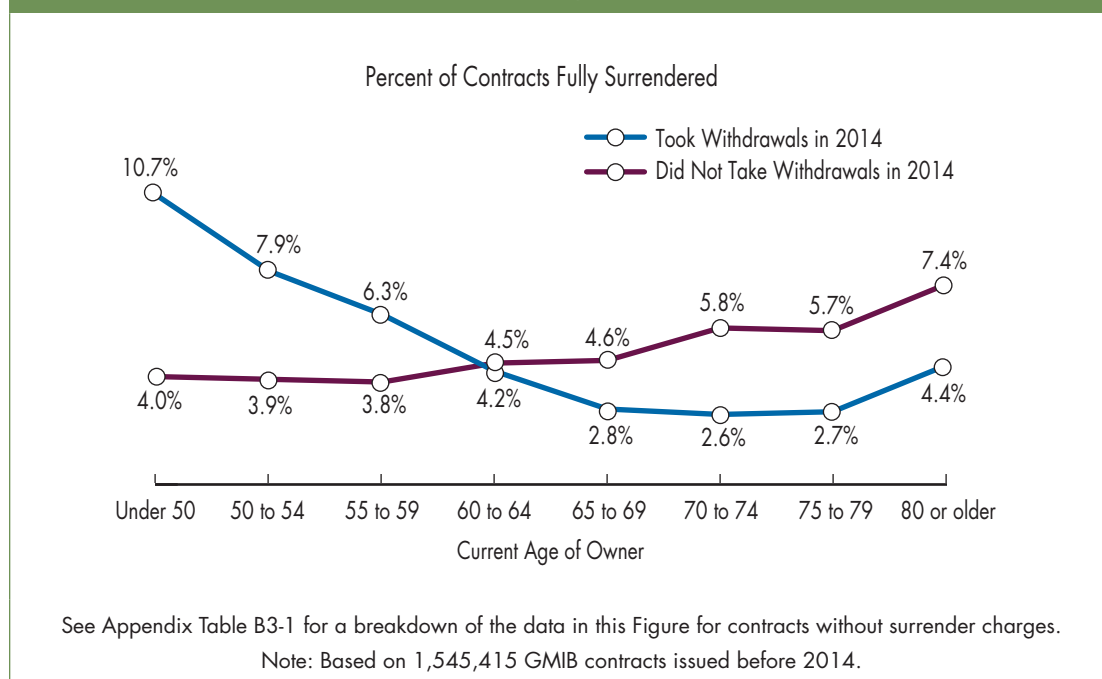


The surrender rates for GMIB contracts are influenced by the level of the surrender charges present in the contract. Naturally, contracts with high surrender charges have lower surrender rates and vice versa. The contract surrender rates are around 6 percent for contracts with no surrender charge, drop to around 4 percent for contracts with a 1 to 2 percent surrender charge, fall to around 2.5 percent for those with 3 to 4 percent surrender charges, and remain around 1 to 2 percent for those with surrender charges at 5 percent or above. Cash value surrender charges are about one percentage point less and follow a similar pattern.

Surrender Activity of Owners Who Take 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 2014. 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 2014 were also more likely to fully surrender their contracts (Figure 3-41).

Figure 3-41: GMIB Contract Surrender Rate by Owners Who Took Withdrawals in 2014



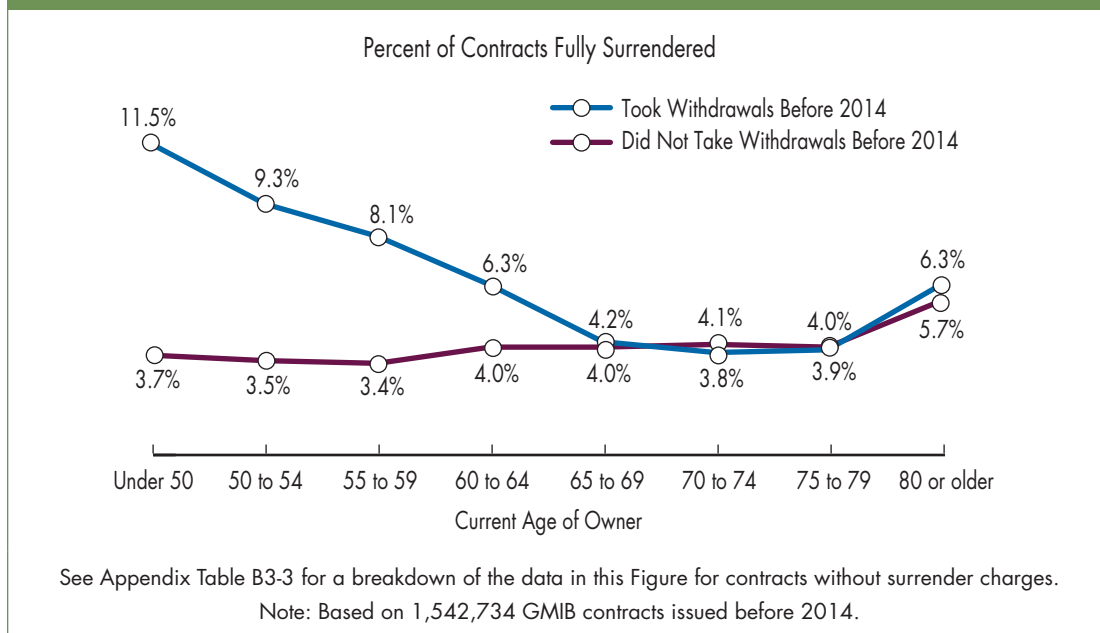
Contract surrender rate among owners under age 60 who took withdrawals in 2014 = **7.6%**.

Contract surrender rate among owners under age 60 who did not take withdrawals in 2014 = **3.9%**.

The contract surrender rate among owners under age 60 who took withdrawals in 2014 was 7.6 percent. On the other hand, the surrender rate was only 3.9 percent among owners under age 60 who did not take any withdrawals in 2014. The surrender rate for owners aged 60 or older who took withdrawals in 2014 (3.1 percent) was lower than the rate for those who did not take withdrawals (5.1 percent).

Past withdrawals can also indicate whether younger owners are likely to surrender contracts in future. Figure 3-42 shows the surrender rate for owners who took withdrawals before 2014.

Figure 3-42: GMB Contract Surrender Rate by Owners Taking Withdrawals Before 2014



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 2014. 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 65 who took withdrawals (Figures 3-43 and 3-44).

Figure 3-43: GMB Cash Value Surrender Rate by Owners Who Took Withdrawals in 2014

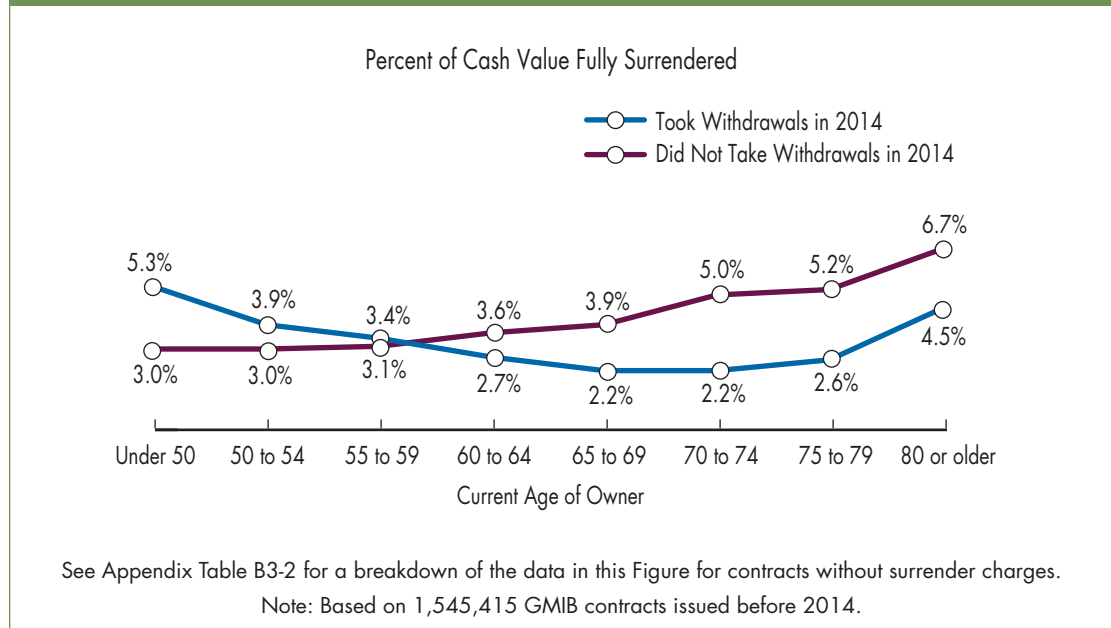
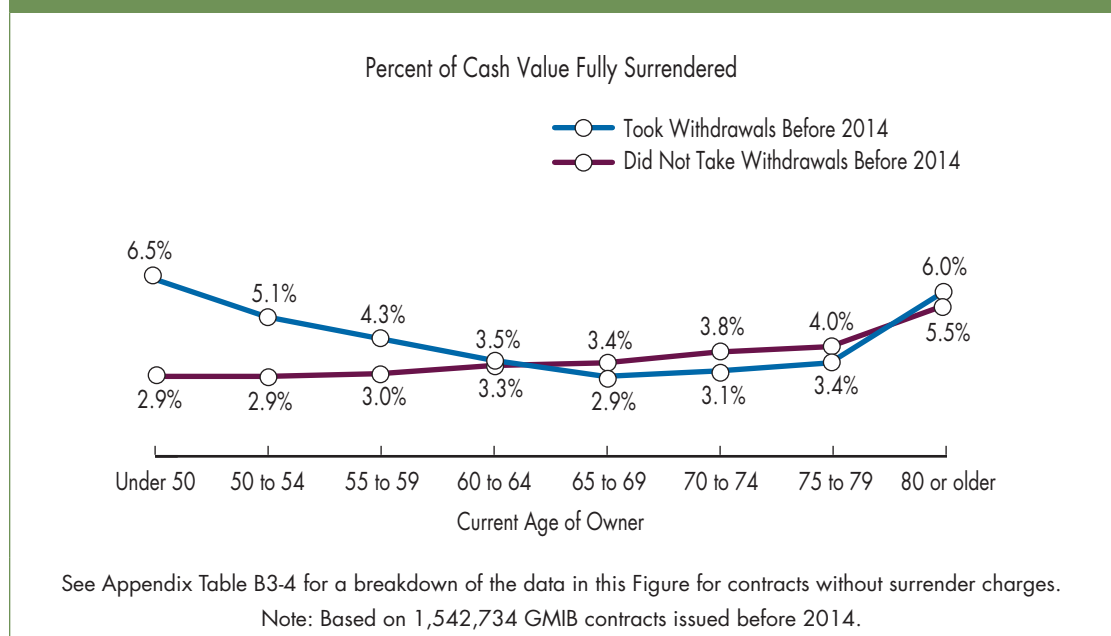


Figure 3-44: GMB Cash Value Surrender Rate by Owners Who Took Withdrawals Before 2014

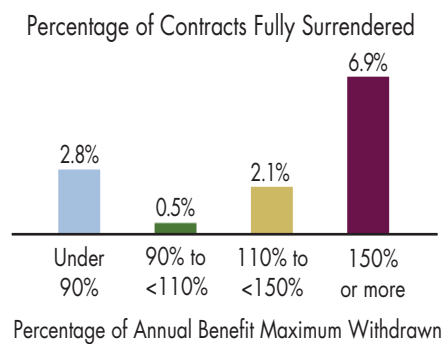


Surrender Activity by Percentage of Annual Benefit Maximum Withdrawn

The previous section established the relationship between surrender activity and withdrawal activity. In this section, we focus on those contracts that had 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 3-45 shows the contract surrender rates — for owners aged 60 to 79 who took withdrawals in 2014 — based on the percentage of annual benefit maximum withdrawn.²⁷ Owners who took between 90 and less than 110 percent of the maximum allowed rarely surrendered the contract.

Figure 3-45: GMIB Contract Surrender Rates by Owners With Contracts Issued Between 2006-2008 Who Took Withdrawals, in Relation to Annual Benefit Maximum Allowed



Note: Based on 211,378 GMIB contracts issued before 2009, with withdrawals in 2014, and owners aged 60–79.

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.

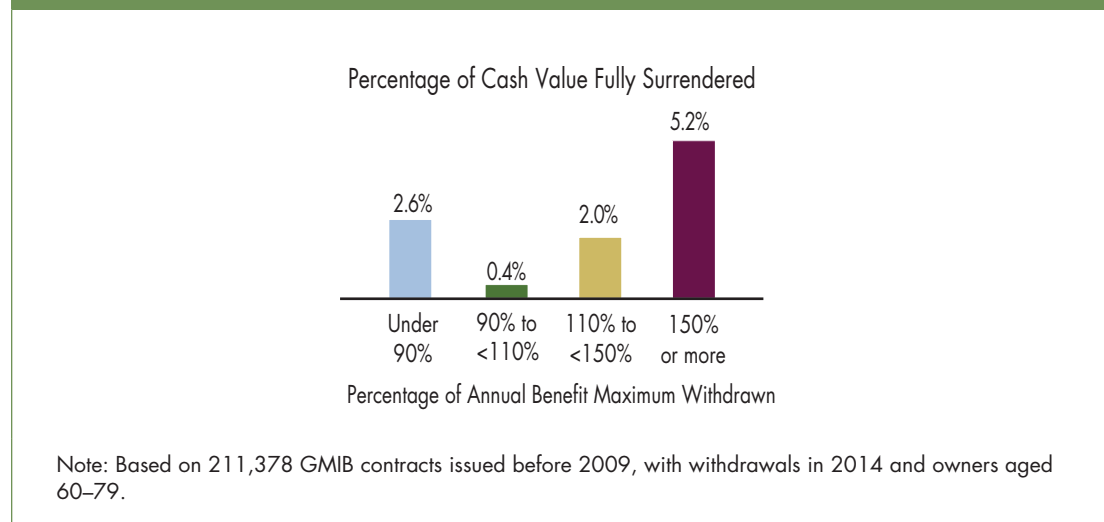
Owners taking less than 90 percent or 150 percent or more of the annual maximum withdrawal amount allowed in their contracts accounted for half of all owners who took withdrawals in 2014, and were responsible for 85 percent of the surrendered contracts.

²⁷ See “Percentage of Maximum Annual Benefit Withdrawn” earlier in this chapter for the definition of GMIB benefit maximum.

The GMIB owners taking 150 percent or more of the maximum accounted for 10 percent of all owners who took withdrawals in 2014. They are also responsible a third of the contracts that surrendered. The GMIB owners who took less than 90 percent of the maximum accounted for 39 percent of the owners and were responsible for just over half of the contracts that surrendered. Any withdrawal behavior not in line with the maximum withdrawal amount can be a reliable indicator of possible surrender behavior of GMIB owners.

The cash value surrender rates among owners who took withdrawals in 2014 — 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 slightly lower (Figure 3-46).

Figure 3-46: GMIB Cash Value Surrender Rates by Owners With Contracts Issued Between 2006-2008 Who Took Withdrawals, in Relation to Annual Benefit Maximum Allowed

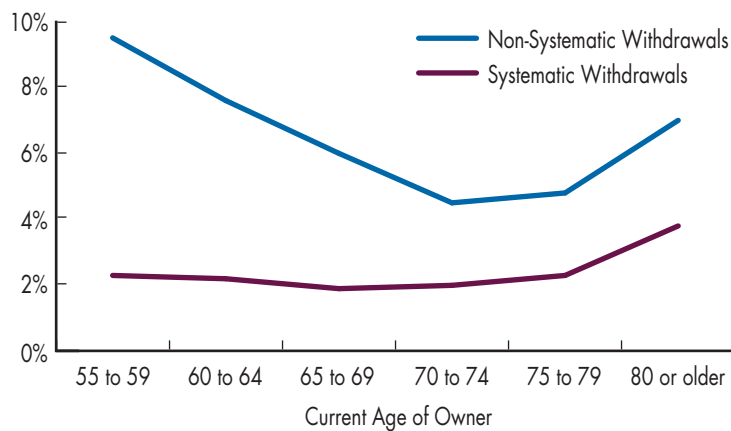


Surrender Activity of Owners Taking Systematic Withdrawals

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.

Overall, the contract surrender rate among owners who took non-systematic or occasional withdrawals in 2014 was 6.5 percent; while the surrender rate among owners who withdrew systematically was a very low 2.3 percent. Non-systematic or occasional withdrawals do not always maximize the benefit withdrawals; and, for younger owners, this indicates higher surrender rates (Figure 3-47).

Figure 3-47: GMIB Contract Surrender Rates by Withdrawal Methods



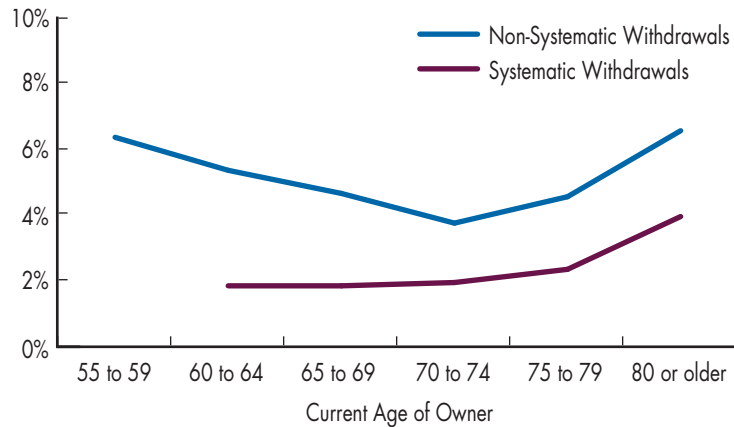
See Appendix Table B3-5 for a breakdown of the data in this Figure for contracts without surrender charges.
Note: Based on 453,741 GMIB contracts issued before 2014 that also had withdrawals in 2014.

Owners using a non-systematic or occasional withdrawal method accounted for a quarter of all owners who took withdrawals, but they accounted for half of all surrendered contracts and 43 percent of cash surrender values in 2014. Surrender rates among older owners who take non-systematic or occasional withdrawals are roughly double the surrender rates of older owners who take systematic withdrawals.

GMIB contract surrender rates are **6.5%** among owners who take occasional withdrawals compared with **2.3%** 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 aged 65 and older who take systematic withdrawals (Figure 3-48).

Figure 3-48: GMIB Cash Value Surrender Rates by Withdrawal Methods



See Appendix Table B3-6 for a breakdown of the data in this Figure for contracts without surrender charges. 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.

Note: Based on 453,741 GMIB contracts issued before 2014 that also had withdrawals in 2014.

However, companies should note that GMIB contract owners — particularly owners under age 70 who are not taking withdrawals — hold on to their contracts longer. All VAs with GLBs are experiencing lower persistency compared with VAs without GLBs; 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 Amount the Benefit Base Exceeded the Contract Value

Another important way to look at GMIB surrender rates involves whether or not the benefit base exceeded the contract value. We looked at surrender rates by the amount the benefit base exceeded the contract value for contracts issued before 2014 that did not have withdrawals before 2014, for issue years 2008 and earlier (Figures 3-49 and 3-50).

Surrender rates were lower for contracts that did not have any withdrawals before 2014 and the benefit base amount exceeded the contract value. GMIB owners appear to be sensitive to this when deciding whether to surrender their contracts. Actuaries should account for this sensitivity when setting assumptions for lapse behavior.

Figure 3-49: GMIB Contract Surrender Rate by Amount the Benefit Base Exceeded the Contract Value When No Withdrawals Taken Before 2014

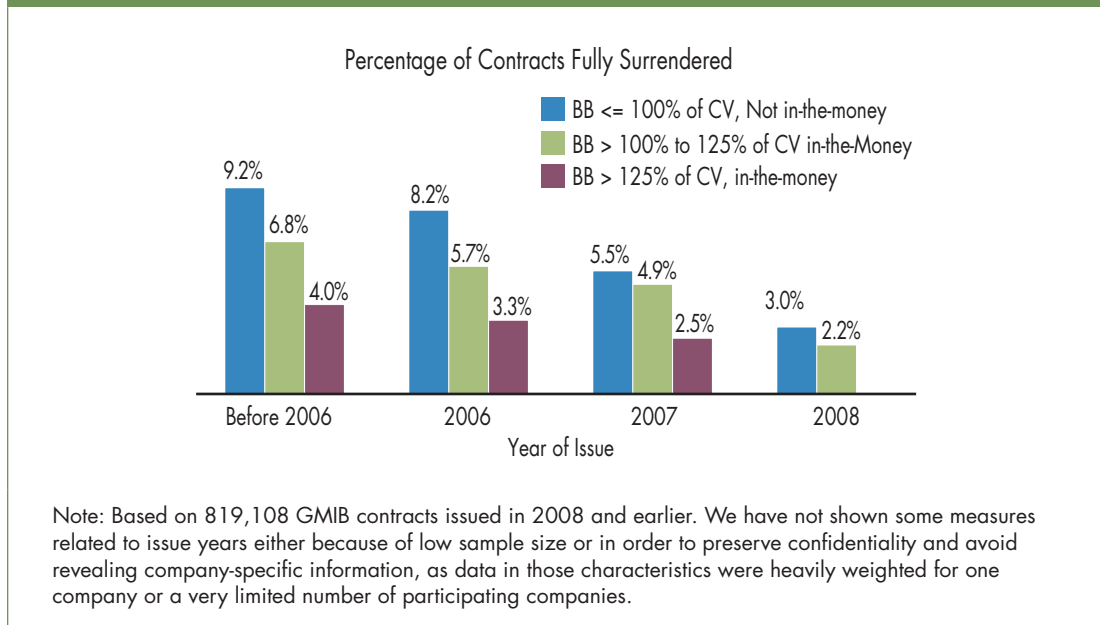
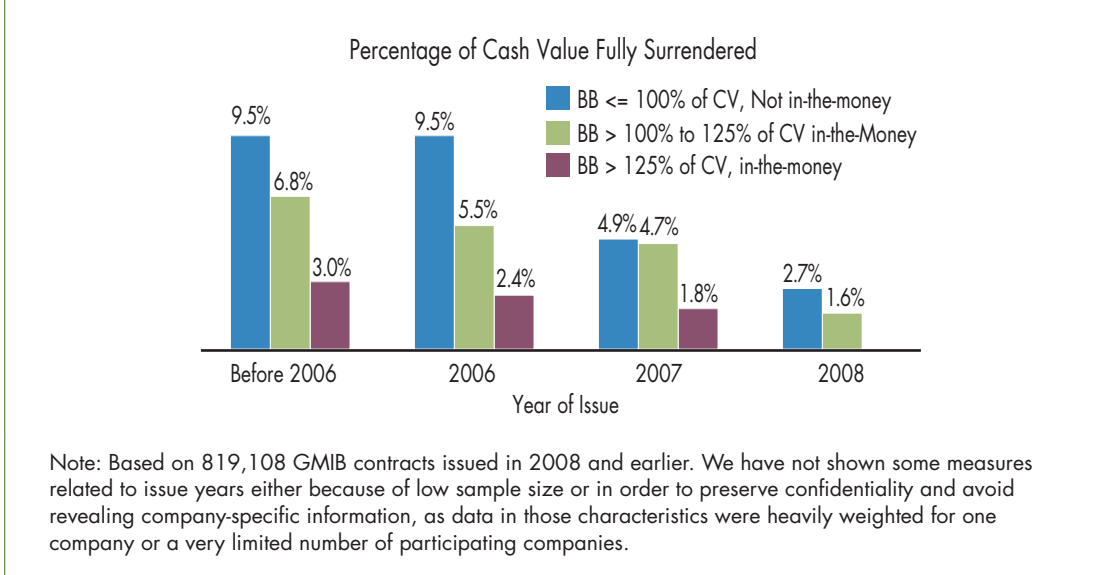


Figure 3-50: GMIB Cash Value Surrender Rate by Amount the Benefit Base Exceeded the Contract Value When No Withdrawals Taken in or Before 2014



However, looking at the surrender rates based on only the amount the benefit base exceeded the contract value may not completely address all issues when trying to understand the persistency risk. First, the vast majority of contracts — particularly those issued before 2008 — had benefit base amounts that exceeded the contract values at the beginning of 2014. Second, for contracts with withdrawals before 2014 the benefit bases being lower than contract values could have been caused by owners taking withdrawals exceeding the benefit maximums, resulting in pro-rata adjustments. Contracts that had benefit base amounts that exceeded the contract values 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.

Surrender Activity by GMIB Benefit Maturity Year

Our analysis of surrender rates by the GMIB benefit maturity year indicates there is an increased likelihood that GMIB owners wait until the GMIB benefit matures to surrender (Figure 3-51). Persistency is high for contracts where the GMIB benefit (the annuitization benefit of guaranteed lifetime income based upon the specified income benefit base) has not yet matured, and is lower for contracts past the benefit maturity period.

Figure 3-51: GMIB Contract and Cash Value Surrender Rates in 2014 by Benefit Maturity Year

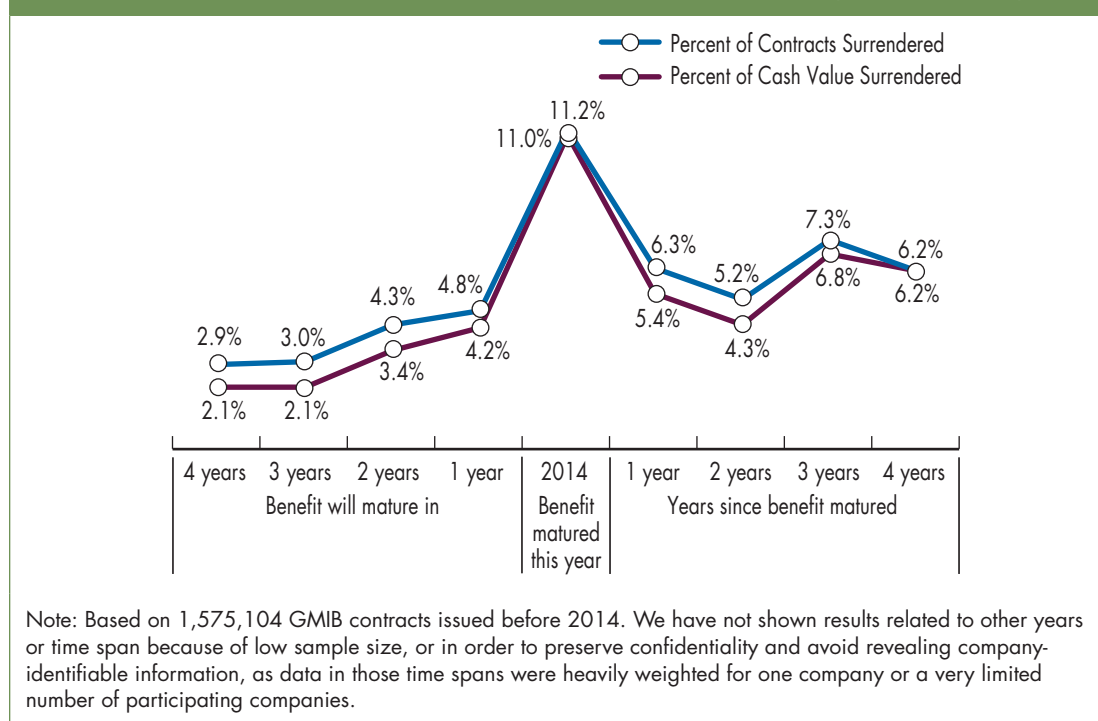


Figure 3-51 highlights a few important points:

- Both the contract and cash value surrender rates in 2014 for contracts where the GMIB benefit matured in the same year were relatively high – around 11 percent. These surrender rates are much higher than the surrender rates typically experienced just after GMIB contracts exit their surrender charge period (Figure 3-38). The GMIB benefit maturity period is typically longer than the contract surrender charge period.
- Contract and cash value surrender rates based on when the benefit matures follow a very similar pattern, irrespective of whether or not the contracts are still within the surrender charge period. Nearly half of the GMIB contracts in the analysis were past the surrender charge period.

Table 3-13 provides the GMIB contract and cash value surrender rates by selected characteristics.

Table 3-13: GMIB Surrender Rates		
	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
All contracts issued before 2014	4.3%	3.4%
Year of issue		
Before 2002	6.3%	5.6%
2002	6.3%	5.3%
2003	6.6%	5.9%
2004	8.1%	7.7%
2005	6.1%	5.3%
2006	4.8%	4.1%
2007	3.6%	2.8%
2008	2.8%	2.1%
Age of owner		
Under 50	4.3%	3.2%
50 to 54	4.1%	3.1%
55 to 59	4.0%	3.2%
60 to 64	4.5%	3.3%
65 to 69	4.1%	3.2%
70 to 74	3.9%	3.4%
75 to 79	3.9%	3.6%
80 or older	6.0%	5.7%
Contract value, BOY 2014		
Under \$25,000	6.7%	5.9%
\$25,000 to \$49,999	4.4%	4.4%
\$50,000 to \$99,999	3.8%	3.8%
\$100,000 to \$249,999	3.4%	3.4%
\$250,000 to \$499,999	3.1%	3.1%
\$500,000 or higher	3.2%	3.3%
Gender		
Male	4.2%	3.4%
Female	4.3%	3.5%
Market type		
IRA	4.1%	3.2%
Nonqualified	4.5%	3.8%

Table 3-13: GMIB Surrender Rates (continued)

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
Cost structure		
B-share	4.4%	3.5%
L-share	3.6%	3.2%

Note: Based on 1,556,445 contracts issued before 2014. 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. 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.

Key Findings

- Larger GMIB contracts tend to have lower surrender rates.
- There is no significant difference in GMIB surrender rates based on gender or market type.
- B-share contracts tend to have higher surrender rates than L-share contracts.

Chapter Four

2014 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 of the principal after a set period of time or waiting period — either the amount initially invested or the contract 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 GMAB owners where the guaranteed benefit base exceeds the contract value 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 increased in 2014, up 20 percent to \$2.4 billion. Sales were \$2.0 billion in 2013 and \$2.4 billion in 2012. Election rates for GMABs remain very low, accounting for around 3 percent of sales where any living benefit is available for purchase.²⁸ This chapter is based on an analysis of 312,475 VA contracts with GMABs, issued by 13 companies. Of these contracts, 262,528 were issued before 2014 and were in force as of December 31, 2014. A total of 19,987 contracts were issued in 2014 and were in force at end-of-year (EOY) 2014. Almost all of GMAB contracts (96 percent) that are still in force were issued in the last decade.

At EOY 2014, the LIMRA Secure Retirement Institute estimates that GMAB assets in the industry were \$27.0 billion. These results from the companies in this study represent a total of 46 in-force GMAB riders introduced between 1991 and 2014, valued at \$24.3 billion at EOY 2014 — 90 percent of total GMAB industry assets.

²⁸ *Variable Annuity Guaranteed Living Benefits Election Tracking, 4th Quarter 2014*, LIMRA Secure Retirement Institute, 2015.

Owner Profiles

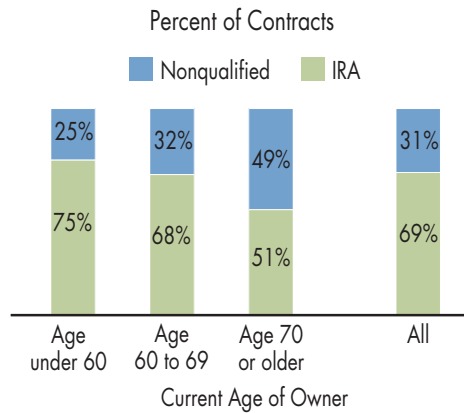
Ownership of IRA and Nonqualified GMAB Annuities

Sixty-nine percent of GMAB contracts issued in 2014 or earlier were IRA, and this is slightly higher than broader industry developments that the LIMRA Secure Retirement Institute has tracked, where roughly 6 in 10 retail VAs are funded with tax-qualified money, the bulk of which is from rollovers.

Seven out of ten GMAB contracts issued in 2014 or earlier were IRA.

Based on contracts issued in 2014 or earlier and still in force at EOY 2014, ownership of IRA annuities is largely concentrated in the hands of owners under age 60. Among those owners, three quarters fund their annuities with qualified money (Figure 4-1). In contrast, half of the owners aged 70 or over fund their GMAB annuities with nonqualified sources.

Figure 4-1: GMAB Ownership by Source of Funds and Age Group



Note: Based on 261,043 contracts issued in 2014 or before and still in force at EOY 2014.

- GMABs can be appropriate annuity investments for conservative to moderate investors who have a long-term investment horizon, typically 10 years or more. 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 downside risk protection. 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.
- 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, 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.

We have not shown any buyer information to preserve confidentiality and avoid revealing company-specific information, since these data were heavily weighted for a very limited number of participating companies.

GMAB Owner and Contract Characteristics

Table 4-1 provides a summary of GMAB owner and contract characteristics at EOY 2014.

Table 4-1: GMAB Owner and Contract Characteristics			
	GMAB Contracts Issued Before 2014	GMAB Contracts Issued in 2014	All GMAB Contracts In Force
Age of owner			
Under 50	21%	29%	21%
50 to 54	13%	16%	13%
55 to 59	16%	18%	17%
60 to 64	17%	18%	17%
65 to 69	15%	12%	14%
70 to 74	9%	5%	9%
75 to 79	5%	2%	5%
80 or older	5%	1%	4%
Average age	59 years	55 years	59 years
Gender			
Male	48%	49%	48%
Female	52%	51%	52%
Market type			
IRA	69%	69%	69%
Nonqualified	31%	31%	31%
Distribution Channel			
Career agent	43%	77%	45%
Independent agent/independent B-D	34%	9%	32%
Full-service National B-D	5%	2%	5%
Bank	18%	12%	18%
Cost Structure			
B-share	83%	90%	84%
C-share	1%	0%	1%
L-share	14%	9%	13%
Other	2%	0%	2%

Table 4-1: GMAB Owner and Contract Characteristics (continued)

	GMAB Contracts Issued Before 2014	GMAB Contracts Issued in 2014	All GMAB Contracts In Force
Contract value, EOY 2014 as percent of contracts			
Under \$25,000	25%	19%	25%
\$25,000 to \$49,999	21%	18%	21%
\$50,000 to \$99,999	24%	24%	24%
\$100,000 to \$249,999	22%	28%	23%
\$250,000 to \$499,999	6%	8%	6%
\$500,000 or higher	2%	3%	2%
Contract value, EOY 2014 as percent of contract value			
Under \$25,000	3%	2%	3%
\$25,000 to \$49,999	8%	6%	8%
\$50,000 to \$99,999	18%	14%	17%
\$100,000 to \$249,999	35%	36%	35%
\$250,000 to \$499,999	21%	21%	21%
\$500,000 or higher	15%	21%	16%
Average contract value, EOY 2014	\$96,772	\$118,959	\$98,342
Median contract value, EOY 2014	\$56,128	\$70,617	\$56,898
Note: Based on 282,515 GMAB contracts still in force at EOY 2014. Percentages are based on number of contracts unless stated otherwise. We have not shown some data such as buyer information to preserve confidentiality and avoid revealing company-specific information, as those data were heavily weighted for one company or a very limited number of participating companies.			

Key Findings

- One fifth of owners were under age 50 and half were under age 60.
- Nine out of ten contracts issued in 2014 were B-share contracts, while L-share contracts made up 9 percent of contracts issued in 2014.
- Career agents issued three quarters of GMAB contracts issued in 2014.
- The average contract value for all GMABs still in force at EOY 2014 was \$98,342.

Benefit Base

At beginning-of-year (BOY) 2014, the average GMAB contract value of \$95,800 exceeded the average benefit base of \$84,500 by 13 percent (Table 4-2). At BOY 2014, 10 percent of GMAB contracts issued before 2014 still had benefit bases that were greater than the contract value. This measure was much lower than 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 2014

	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$21,099,082,487	\$23,923,426,341	113%
Average	\$84,462	\$95,768	113%
Median	\$48,840	\$55,694	114%
Percent of contracts where benefit base exceeded the contract value			10%
Note: Based on 249,806 GMAB contracts issued before 2014 and remaining in force at EOY 2014. Excludes contracts for which the GMAB benefit bases could not be determined.			

Table 4-3: GMAB Benefit Base and Contract Value, at EOY 2014

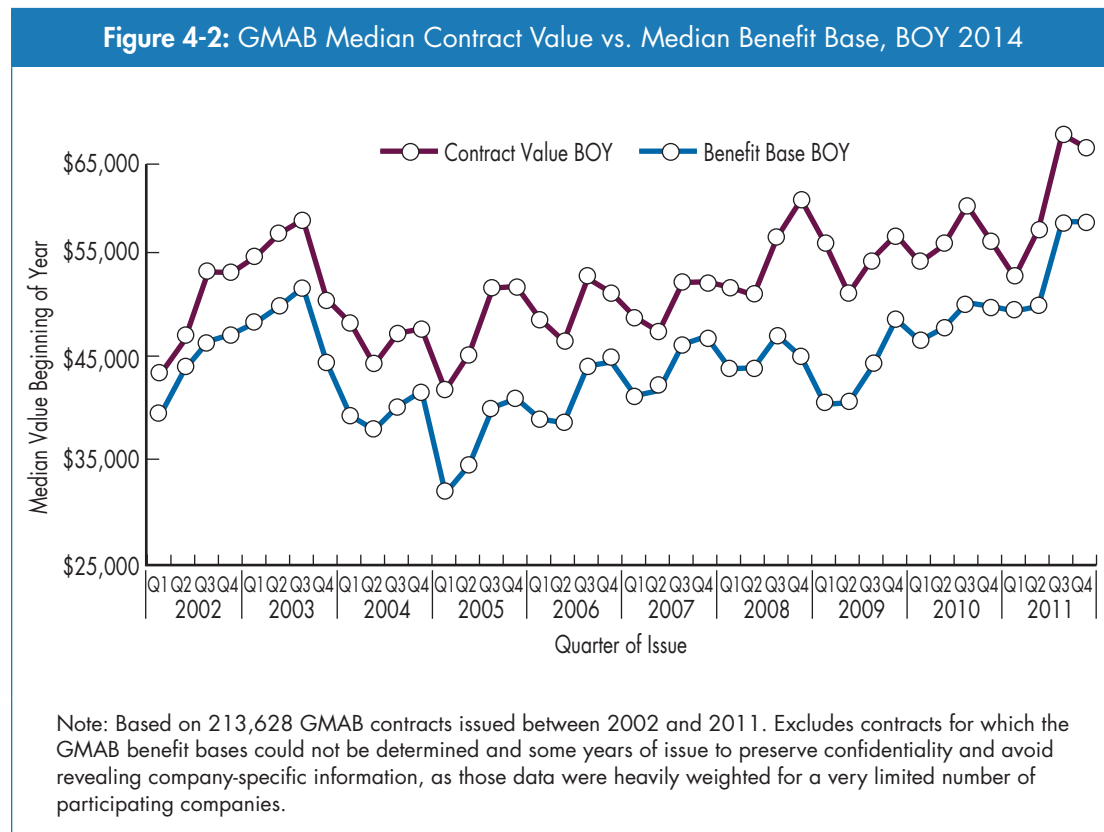
	Benefit Base Amount	Contract Value	
		Amount	Percent of Benefit Base
Sum	\$20,767,153,632	\$24,250,326,226	117%
Average	\$83,133	\$97,077	117%
Median	\$47,739	\$56,305	118%
Percent of contracts where benefit base exceeded the contract value			11%
Note: Based on 249,806 GMAB contracts issued before 2014 and remaining in force at EOY 2014. Excludes contracts for which the GMAB benefit bases could not be determined.			

11% of GMAB contracts had benefit bases that exceeded the contract values at EOY, compared with **10%** at BOY 2014.

In 2014, the S&P 500 market was up 14 percent. By EOY 2014, the average GMAB contract value grew 1 percent from \$95,800 to \$97,100 (Table 4-3). The average benefit base fell slightly from \$84,500 to \$83,100. In aggregate, 11 percent of the GMAB contracts had benefit bases that were greater than the contract values at EOY.

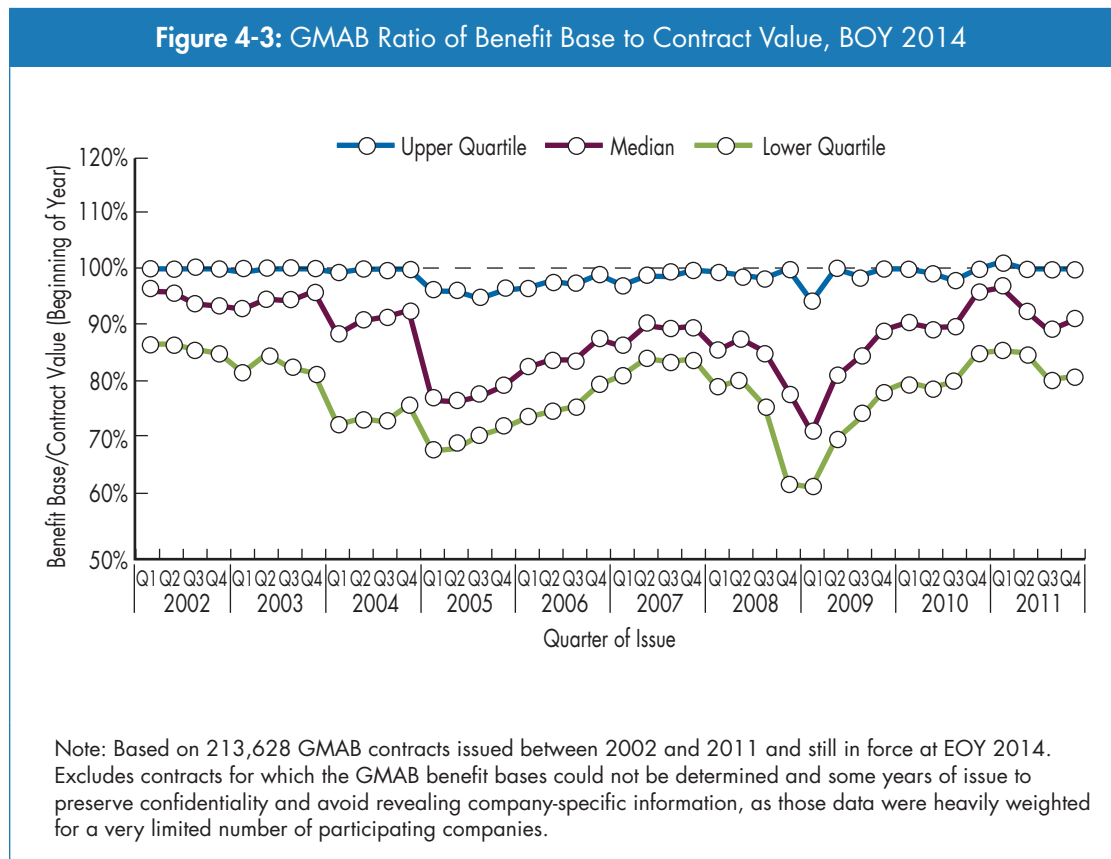
Benefit Base by Quarter and Year of Issue

Just over a third of GMAB contracts were issued in 2007 or prior, thus a large segment of the contracts went through considerable market volatility — involving both deep losses during the market crisis in 2008 to 2009 and significant gains from 2010 to 2014. The contracts issued in 2003, for example, experienced a brief period of market gains in 2006 to 2007, and had less of a setback during the last market crisis. (Figure 4-2). At BOY 2014, median GMAB contract values were higher than the median benefit base from 2002 through 2011.



Overall, contracts issued between 2002 and 2011 had median contract values exceeding the median benefit base, by amounts as much as \$15,600 in Q1 2009.

Not all GMAB contracts had contract values that were greater than or equal to the benefit base. For example, some GMAB contracts issued during 2002–2004 or 2008–2009 had benefit bases that exceeded the contract values at BOY 2014. Favorable market conditions in 2010–2014 helped to bring the median benefit base to median contract value ratio equal to or less than 100 percent for many contracts. Figure 4-3 shows the comparison between the ratio of the median benefit base to median contract value for GMABs at BOY 2014, as well as the inter-quartile range to understand how widely (or narrowly) distributed the ratios were.



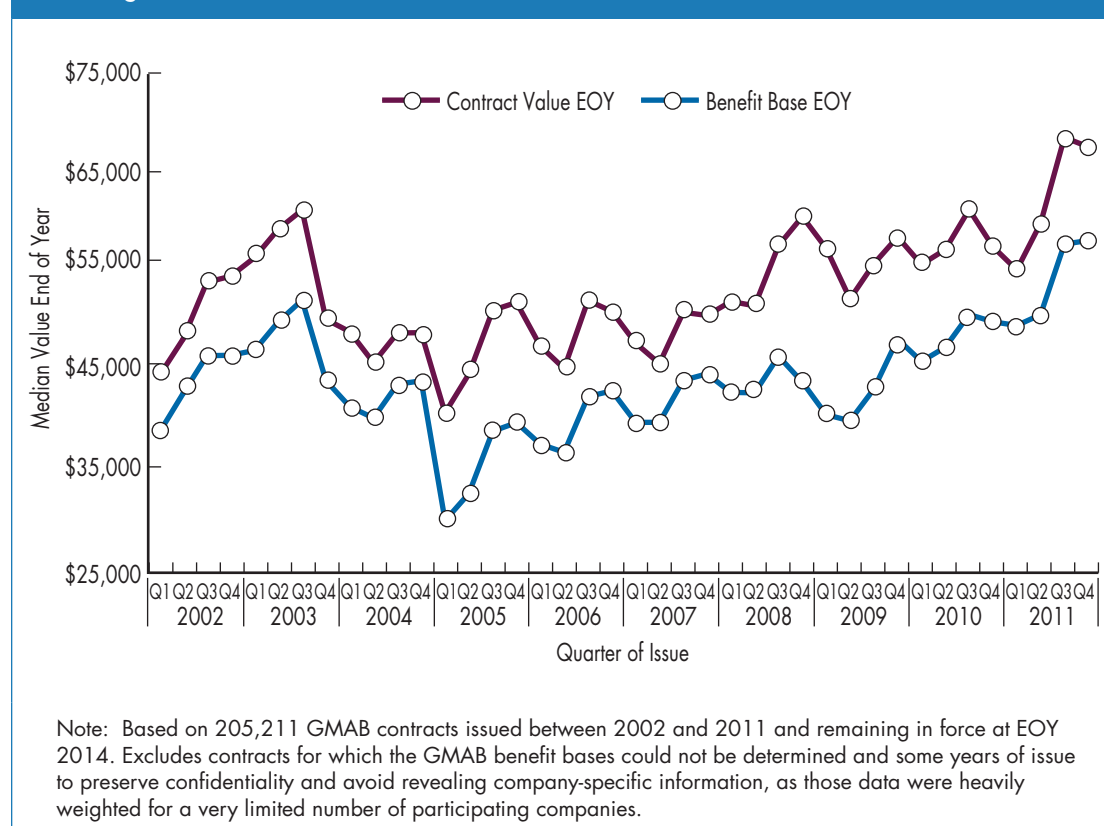
The upper and lower quartiles in Figure 4-3 refer to the distribution of median benefit base to median contract value (BB/CV) ratios, not to the distribution of contract values. For example, for contracts issued in Q1 2004 the typical contract had a median benefit base that was around 88 percent of the median contract value at BOY 2014.

The data show that the BB/CV ratios for contracts issued from Q1 2004 to Q2 2005 had some of the greatest differences — with 25 percent of those ratios below 80 percent while another 25 percent were near 100 percent at BOY. Contracts issued during the market crisis — from Q4 2008 to Q3 2009 — also had a large spread in BB/CV ratios. Those contracts that were issued without a step-up or other ratcheting method have lower benefit bases relative to contract values, as the contract values were much higher in 2014 than 2009.

During 2014 the equity market grew, and so did the contract values. Thus, the BB/CV ratio decreased, for most quarters. The median contract value increased from \$55,700 at BOY 2014 to \$56,300 at EOY 2014.

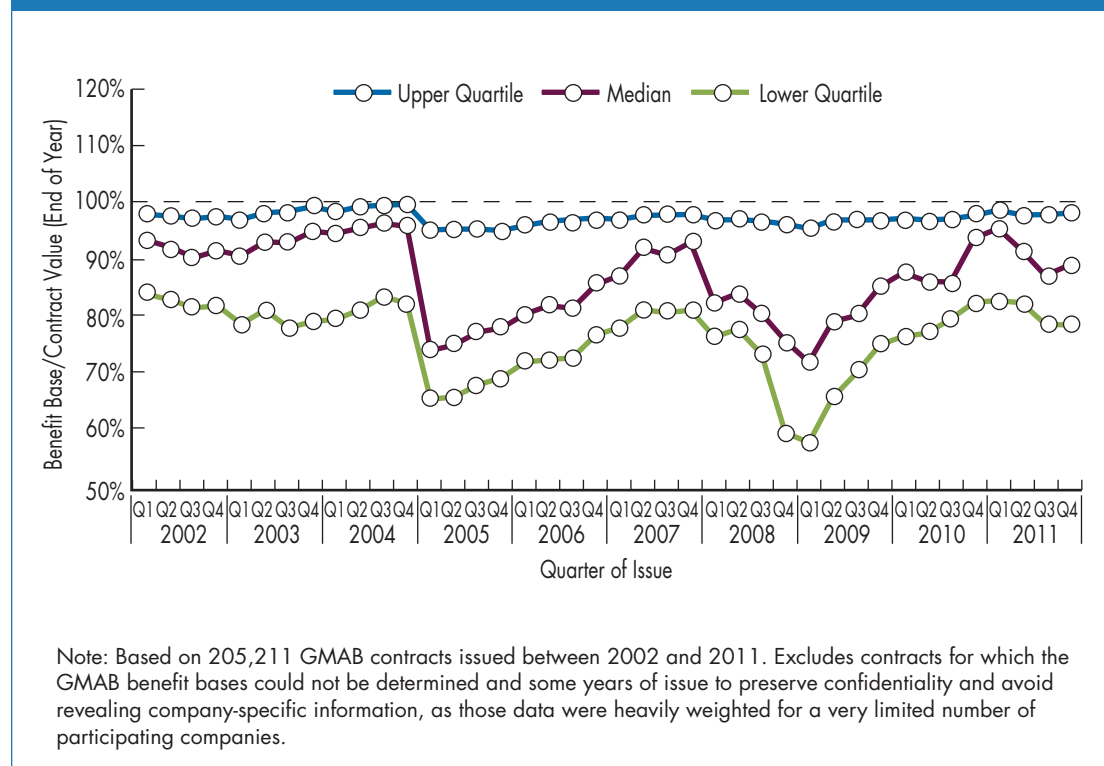
At EOY 2014, the median contract values exceeded the median benefit base values in every quarter. The gap between the median contract value and the median benefit base in GMAB contracts was largest for contracts issued in 2005, and from Q4 2008 to Q3 2009 (Figure 4-4). For these contracts, contract values exceeded benefit values by a range of \$10,700 to \$16,500 — these differences 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 2014



At EOY, all quarters 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.

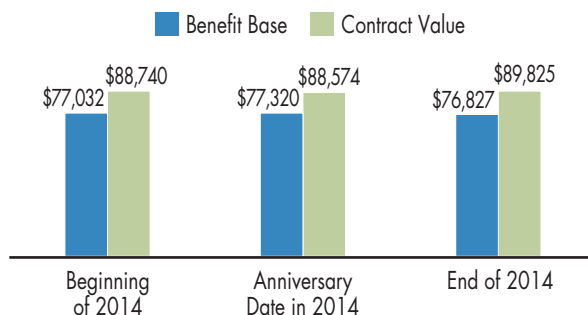
Figure 4-5: GMAB Ratio of Benefit Base to Contract Value Distribution at EOY 2014



Most GMAB contracts had contract values that were greater than or equal to the benefit base at EOY 2014.

Given the continued growth in the equity markets, the majority of GMAB contracts had BB/CV ratios that were near or below 100 percent. Of all the contracts issued from 2002 to 2011, 22 percent were issued in 2005 to 2006 and these contracts had a median ratio between 74 and 86 percent. Another 1 in 4 contracts were issued between 2008 and 2009 and these contracts also had relatively low BB/CV ratios at EOY 2014, with median ratios between 72 and 85 percent.

The average contract value increased from \$88,700 at BOY 2014 to \$89,800 at EOY 2014, gaining 1 percent in value (Figure 4-6). On the anniversary date in 2014, the average benefit base of \$77,300 was slightly higher than the average benefit base of \$77,000 at BOY. GMAB riders typically reduce the benefit base with each withdrawal. At EOY 2014, the average benefit base value of \$76,800 was about \$13,000 less than the average contract value.

Figure 4-6: GMAB Average Contract Values and Benefit Base Values

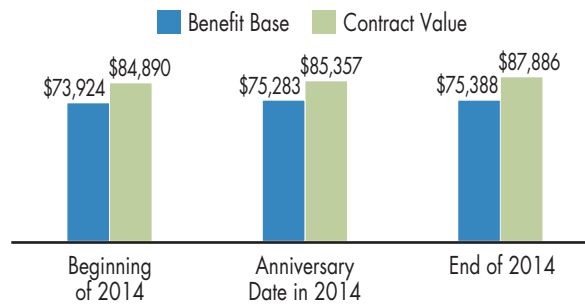
Note: Based on 169,627 GMAB contracts issued before 2014 and still in force at EOY 2014. Excludes contracts for which the GMAB benefit bases (as of BOY, the contract's anniversary date, or EOY) could not be determined.

Across all 169,627 GMAB contracts where companies reported both contract values and benefit bases, benefit bases totaled \$13.0 billion as of EOY 2014, compared with account balances of \$15.2 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 2014 that did not have withdrawals in 2014, the average benefit base increased slightly — \$73,900 at BOY compared to \$75,300 on the anniversary date and \$75,400 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. The average value of these contracts increased during the year, given the equity market gains. At EOY 2014, the average contract value gained 4 percent and was \$12,500 larger than the average benefit base value for contracts without withdrawals.

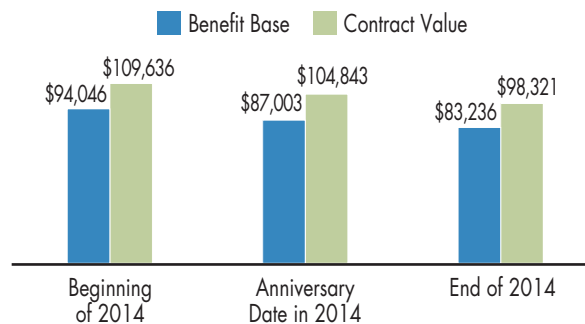
Figure 4-7: GMAB Average Contract Value and Benefit Base for Contracts Without Withdrawals



Note: Based on 133,373 GMAB contracts issued before 2014 and still in force at EOY 2014 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 2014, the average benefit base declined 12 percent, from \$94,000 at BOY to \$83,200 at EOY. The average contract value declined by 10 percent, but was \$15,100 larger than the benefit base (Figure 4-8).

Figure 4-8: GMAB Average Contract Value and Benefit Base for Contracts With Withdrawals



Note: Based on 29,845 GMAB contracts issued before 2014 and still in force at EOY 2014 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 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.

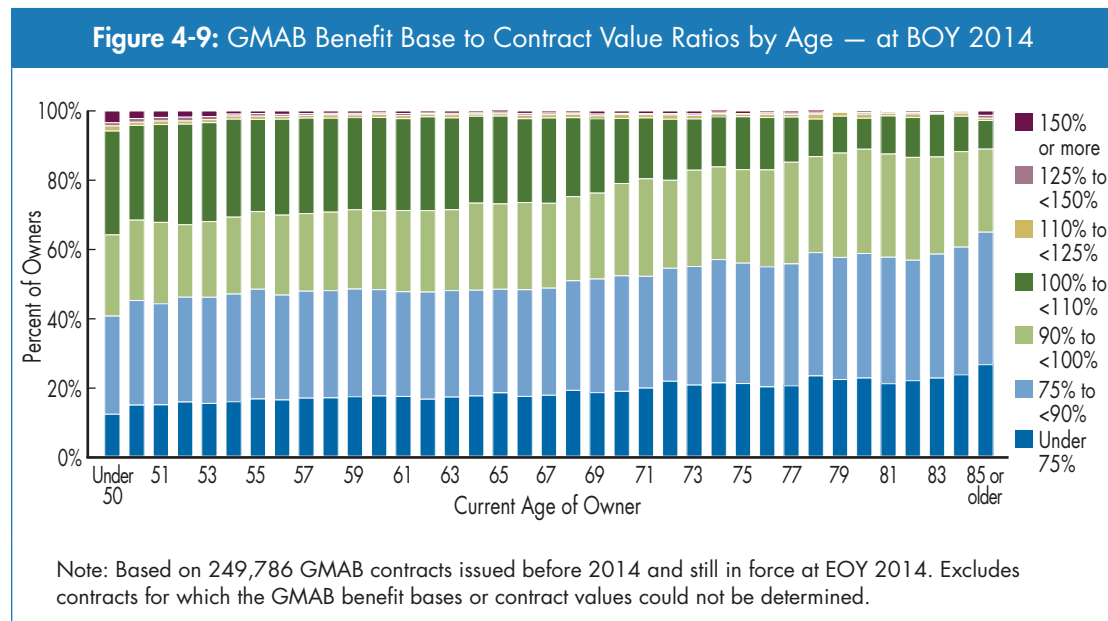
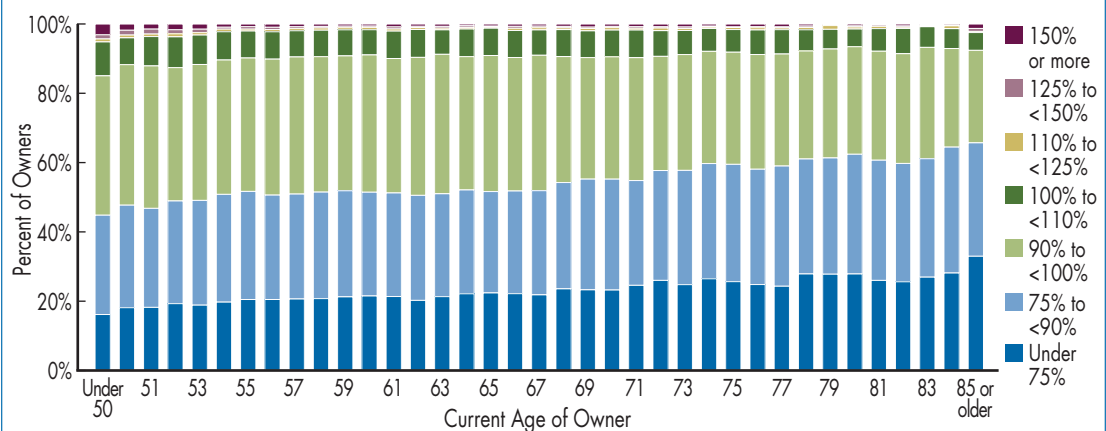


Figure 4-9 provides the BB/CV ratios by age at BOY 2014. For in-force GMAB contracts issued before 2014, at BOY: 72 percent had benefit base amounts below their contract values — with one quarter falling between 90 percent and less than 100 percent; 25 percent had BB/CV ratios between 100 to less than 110 percent; 1 percent had benefit bases that exceeded contract values by 110 to less than 125 percent; and only 2 percent had BB/CV ratios of 125 percent or more. Eighty-four percent of the owners aged 70 or older had BB/CV ratios below 100 percent.

At EOY 2014, **9 out of 10** GMAB contracts had BB/CV ratios **less than 100%**

Figure 4-10 shows the distribution of BB/CV ratios by age at EOY 2014. The contracts with BB/CV ratios less than 100 percent improved to 9 out of 10 by EOY 2014: 4 in 10 had BB/CV ratios between 90 percent and less than 100 percent; 30 percent had BB/CV ratios between 75 to less than 90 percent, and 1 in 5 had ratios less than 75 percent. Eight percent had BB/CV ratios between 100 to less than 110 percent; 1 percent had benefit bases that exceeded contract values by 110 to less than 125 percent; and only 2 percent had BB/CV ratios of 125 percent or more.

Figure 4-10: GMAB Benefit Base to Contract Value Ratios by Age — at EOY 2014

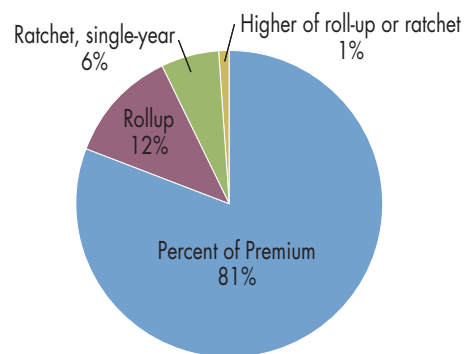


Note: Based on 249,786 GMAB contracts issued before 2014 and still in force at EOY 2014. Excludes contracts for which the GMAB benefit bases or contract values could not be determined.

GMAB Benefit Calculation Method

Just over 8 out of 10 GMABs had benefit bases that were determined based on total premiums received (Figure 4-11). Only 2 percent of the GMAB contracts using the percent-of-premium benefit calculation method had roll-ups above 100 percent of premium.

Figure 4-11: GMAB Benefit Calculation Method



Note: Based on 262,528 GMAB contracts issued before 2014.

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 greater than the contract value, then the contract value is automatically set to the guaranteed benefit base.

Most contracts (86 percent) have benefit maturity dates in 2015 or later (Figure 4-12). Over half (55 percent) of GMAB contracts in force will mature between 2015 and 2020.

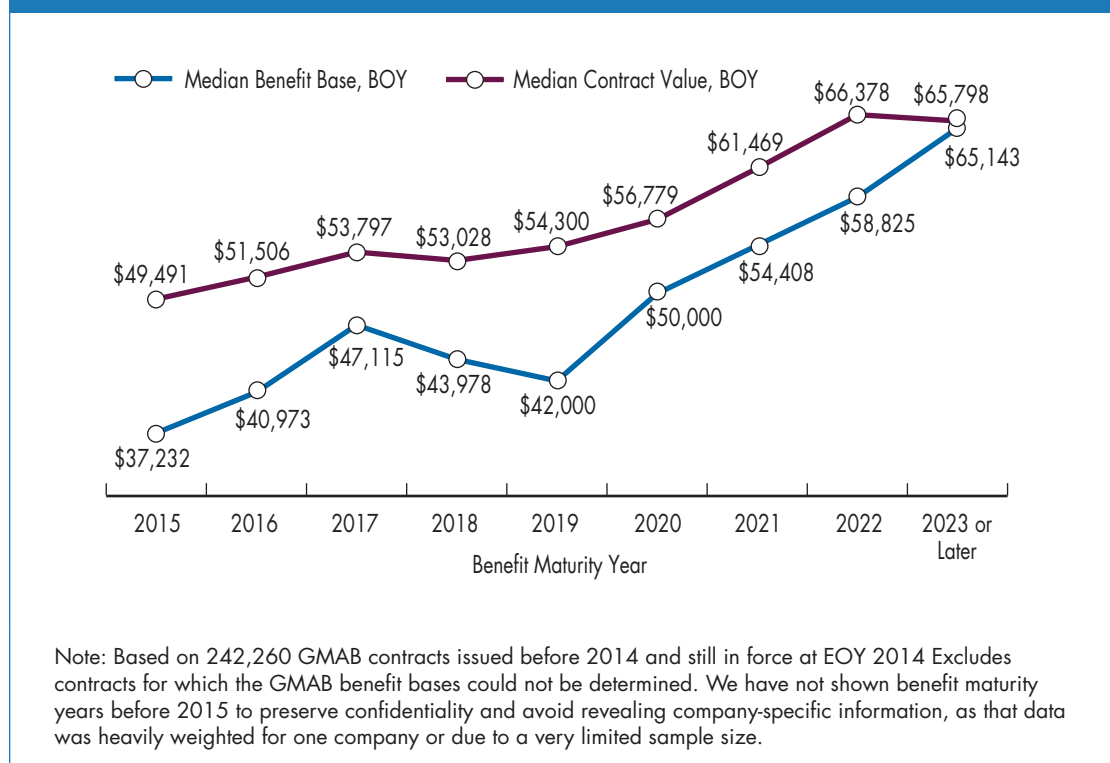
Figure 4-12: GMAB Percentage of Contracts by Benefit Maturity Year



Year of Benefit Maturity

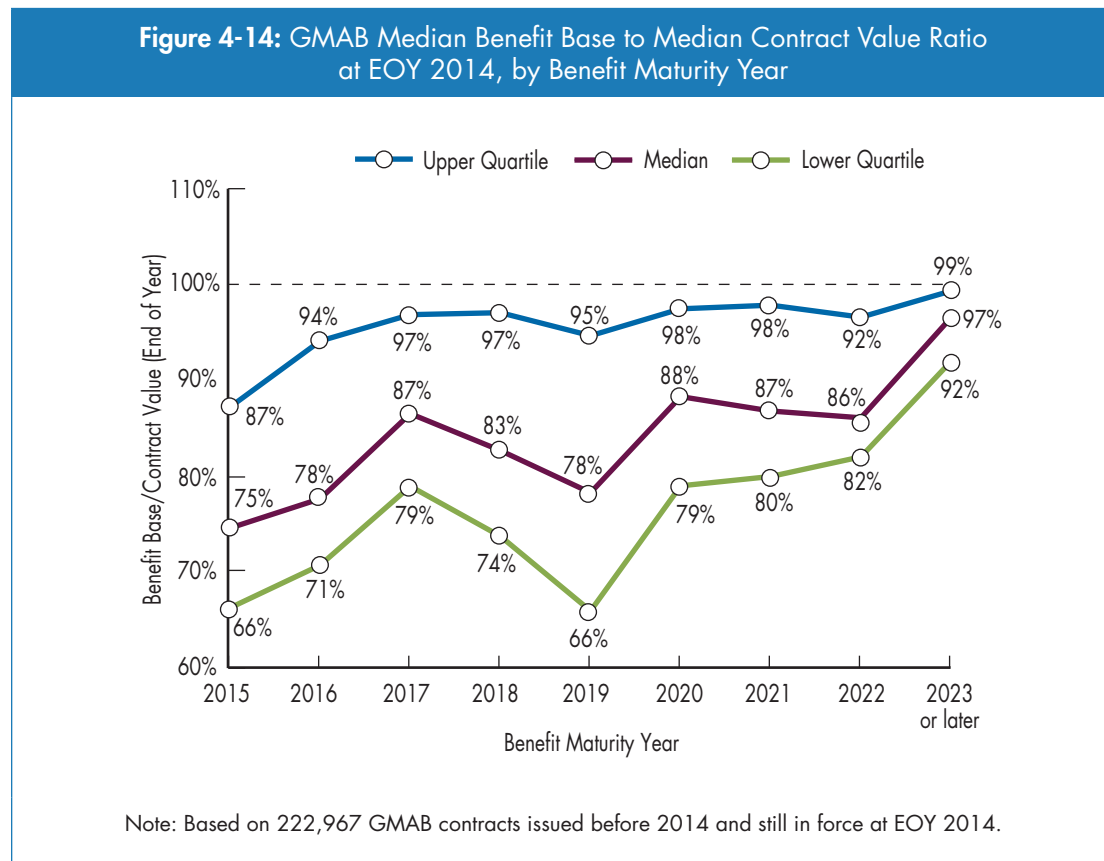
Most of the GMAB benefits in force mature 7 to 10 years after they are elected. Contracts with benefit maturities that occur before 2018 — half of all GMAB contracts — have median contract values that exceed the median benefit bases (Figure 4-13). The difference between the median contract value and the median benefit base ranges from \$3,900, to \$12,300 for GMAB contracts where guarantees may accrue in the next five years. The median values of both the contracts and benefit bases slowly rise for contracts with benefit maturity dates from 2017 and later. The contracts that will mature in 2019 have the greatest difference, with the median contract value exceeding the median benefit value by \$12,300 at BOY.

Figure 4-13: GMAB Median Benefit Bases and Contract Values by Benefit Maturity Year



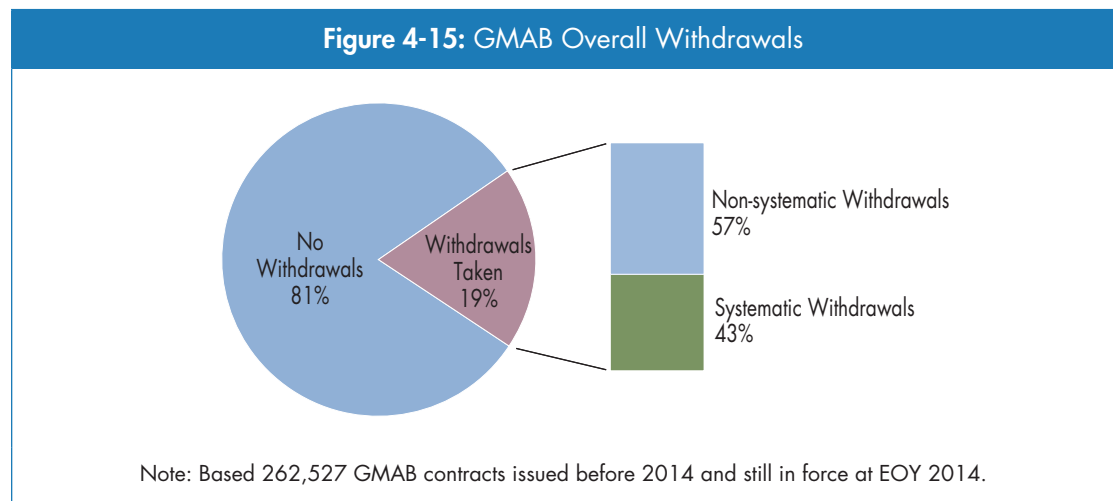
A comparison of the ratio of median benefit base to median contract value for GMAB contracts at EOY 2014 is shown in Figure 4-14. The inter-quartile ranges show the distribution of ratios for different maturity years by year-end. Companies can compare their own quartiles of this ratio and its distribution to see how their own book of business compares with this industry snapshot at EOY 2014.

GMAB contracts with benefit maturity in 2017 and 2020 or after tend to have higher BB/CV ratios, with median ratios at or exceeding 86 percent.



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 262,527 GMAB contracts issued before 2014 and still in force at EOY, 19 percent had some withdrawal activity during 2014 (Figure 4-15), very similar to experience in 2012 and 2013. For 43 percent of contracts, these withdrawals were systematic withdrawals.



The highlights below are based on GMAB contracts that had withdrawals in 2014:

- The percent of GMAB owners using systematic withdrawals is much lower compared to the other GLB products.
- Total withdrawals amounted to \$839 million for the year, of which \$174 million were systematic.

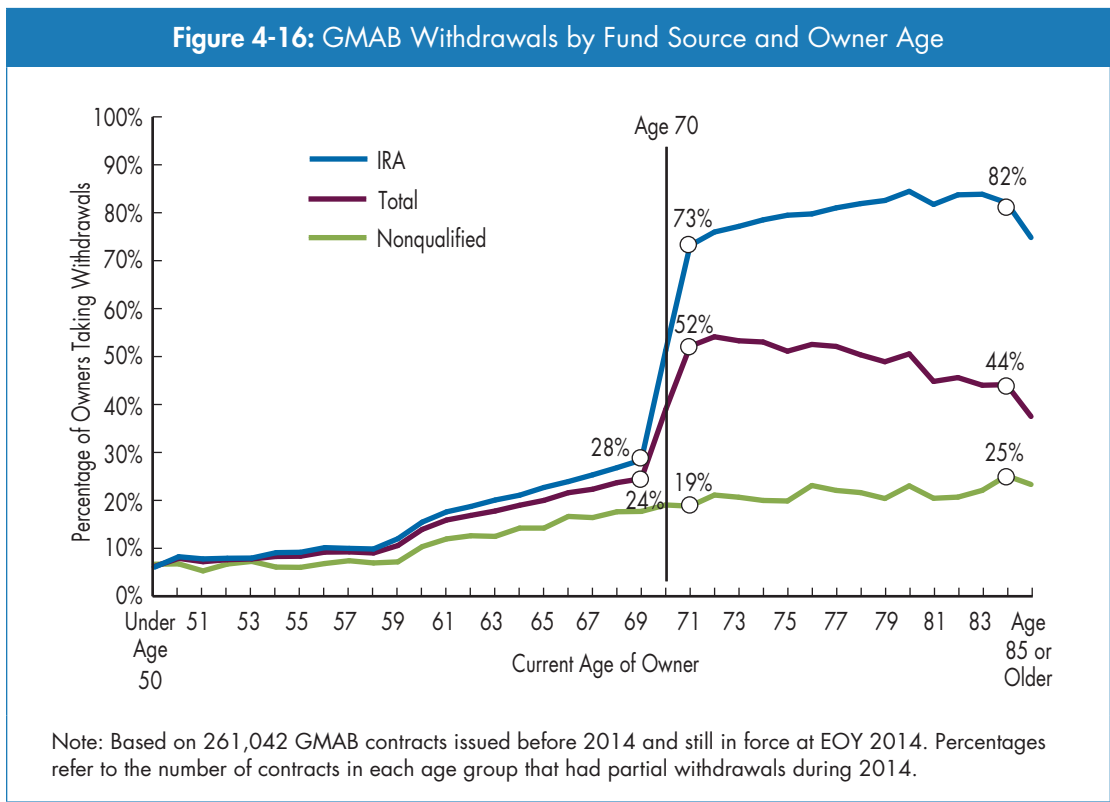
19% of GMAB owners took withdrawals in 2014.

- The median withdrawal amount was \$7,500. The median withdrawal rate was 9.9 percent based on the average BOY median contract value of \$75,100.
- Median systematic withdrawal amount during the year was \$4,900.

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 for those who funded their annuities with qualified funds (Figure 4-16).

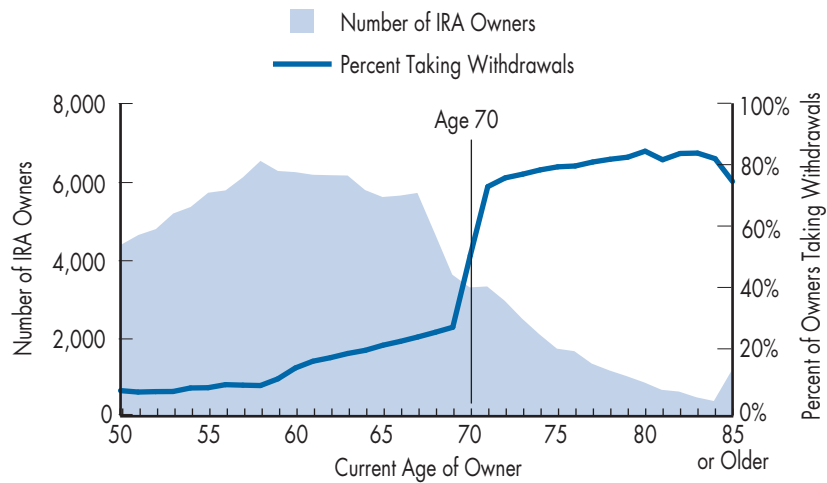
Around **80%** percent of older customers took withdrawals from annuities purchased with qualified money.



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 to 72. After age 72, the percent of these customers withdrawing slowly rises to roughly 80 percent for owners aged 76 and older. Owners are less likely to take withdrawals if they used nonqualified money, and the percent of nonqualified customers withdrawing remains 25 percent or under for all ages.

In 2014, only 14 percent of GMAB owners who funded their annuities with qualified sources were aged 70 or over (Figure 4-17). Three fourths of these owners took withdrawals in 2014. On the other hand, 13 percent of owners aged 69 or under took withdrawals in 2014.

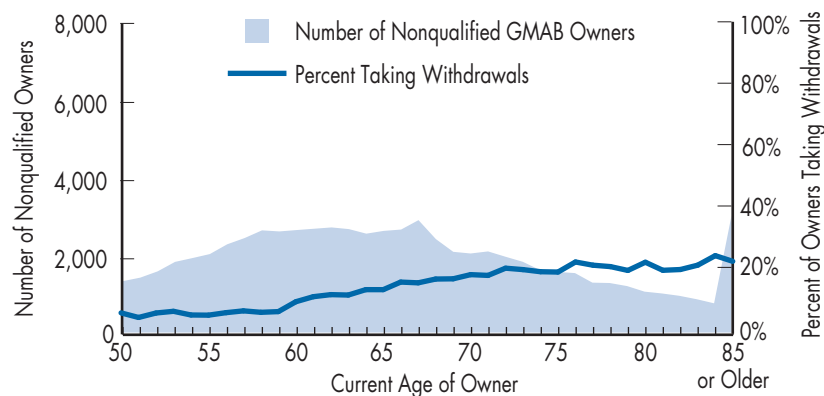
Figure 4-17: GMAB Withdrawals by IRA Owners



Note: Based on 136,858 GMAB contracts issued before 2014 and still in force at EOY 2014. Percentages refer to the number of contracts in each age group that had partial withdrawals during 2014.

Only 13 percent of nonqualified owners took withdrawals in 2014 (Figure 4-18). The percent of owners taking withdrawals increases very slowly with age. Twenty-one percent of owners aged 70 or over and 10 percent of owners aged 69 or under took withdrawals from their GMAB contracts.

Figure 4-18: GMAB Withdrawals by Nonqualified Owners



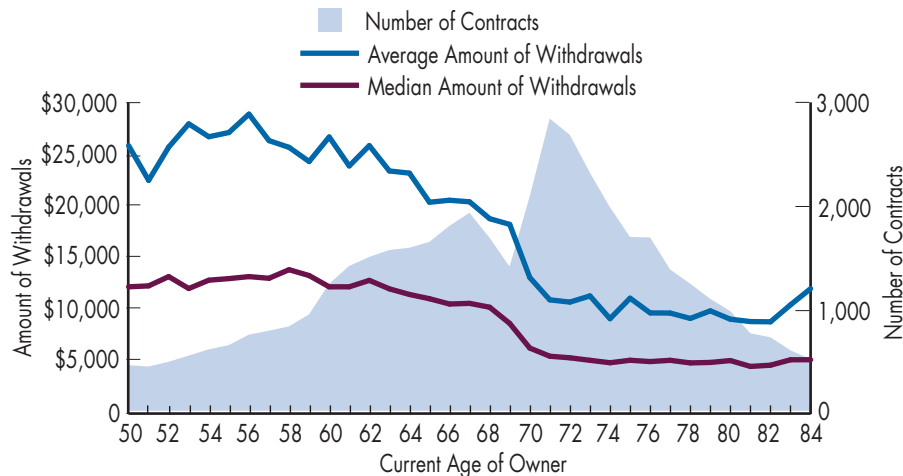
Note: Based on 70,463 GMAB contracts, funded by nonqualified savings, issued before 2014 and still in force at EOY 2014.

Average Amount of Withdrawals

The average amount of withdrawals in GMAB contracts was \$17,000 for contracts issued before 2014 that were in force at EOY 2014. The median amount was \$7,500.

Some owners in their 50s and 60s took average withdrawals of more than \$20,000 from their contracts (Figure 4-19). Despite only 14 percent of these owners taking withdrawals, their high withdrawal amounts accounted for 61 percent of all withdrawals in 2014. 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.

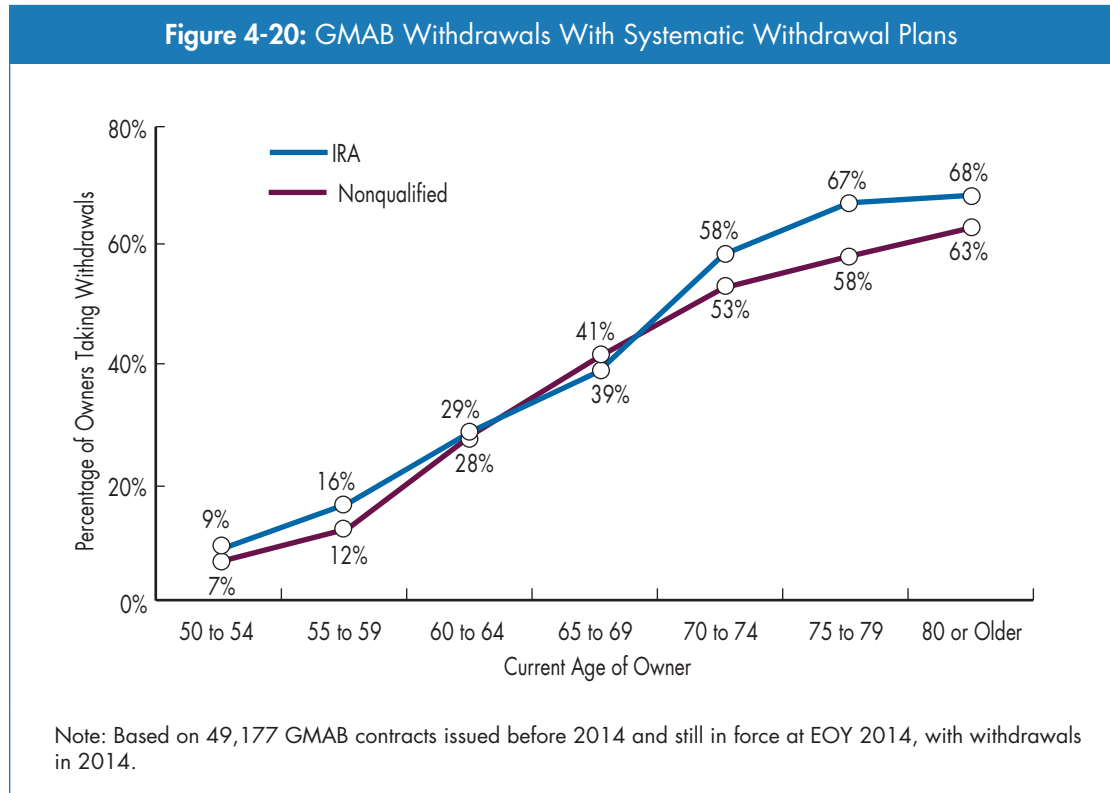
Figure 4-19: GMAB Amount of Withdrawals by Owner's Current Age



Note: Based on 44,714 GMAB contracts issued before 2014, still in force at EOY 2014, with withdrawals in 2014.

Systematic Withdrawal Activity

One fifth of GMAB owners are taking withdrawals; which, for older owners are often to satisfy RMDs. 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 RMDs. Typically, companies treat 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, 44 percent of IRA owners took withdrawals using SWPs while 41 percent of nonqualified owners used SWPs. However, use of an SWP is higher among older owners. For example, 25 percent of IRA owners under age 70 used SWPs for withdrawals, and the rest took withdrawals non-systematically or occasionally. On the other hand, 63 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.

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 2014 or earlier:

- Five percent received additional premium in 2014. Among contracts issued in 2013, 10 percent received additional premium and 7 percent of contracts issued in 2012 added premium in 2014.
- The average additional premium in 2014 was \$27,800, with a median of \$6,200.
- Younger owners were more likely to add premium than older owners. For example, 7 percent of owners under age 50 added premium, compared with 3 percent of owners aged 70 or older.

Table 4-4: GMAB Net Flows

	Dollars (in Billions)	Contracts	Average Contract Size
In-force, BOY 2014	\$27.8	292,376	\$95,195
Premium received			
Newly issued contracts	\$2.30	N/A	\$114,251
Existing contracts	\$0.38	N/A	N/A
Benefits paid			
Partial withdrawals	\$1.24	N/A	N/A
Full surrenders	\$2.10	27,939	\$74,989
Deaths	\$0.16	1,799	\$89,413
Annuitizations	<\$0.1	204	\$102,696
Investment growth	\$0.79	N/A	N/A
In-force, EOY 2014	\$27.8	282,533	\$98,342

N/A=Not available.

Note: Based on 312,475 GMAB contracts. Dollar values for contracts issued before 2014 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 2014 that terminated during the year were set equal to the current-year premium.

Premium received, new contracts issued, and investment growth 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 3 percent during 2014.

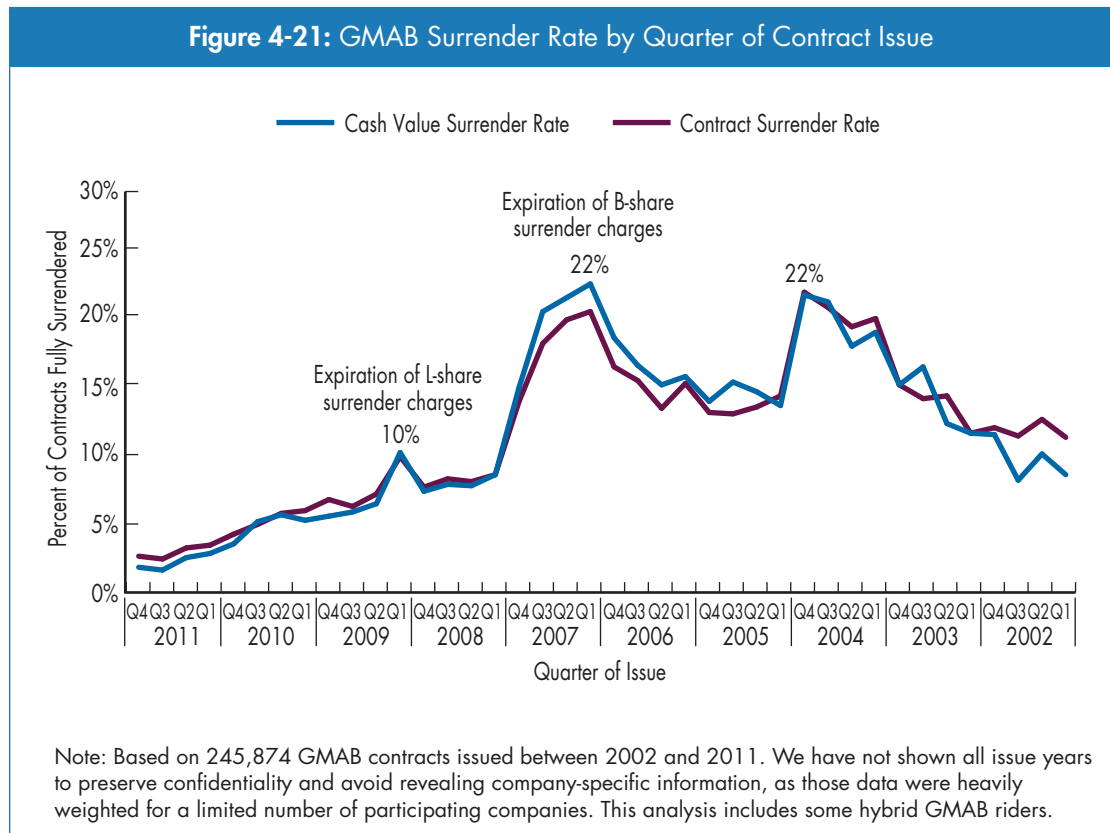
Persistence

GMABs have the highest overall contract surrender rates (9.5 percent) compared with other GLBs. 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.

Surrender rate for GMAB contracts in 2014 = **9.5%**

Contract surrender rates were extremely high (16.1 percent) for GMAB contracts issued from 2002 – 2007 (Figure 4-21). There is also a noticeable increase in surrender rates at the expiration of the B-share and L-share surrender charges as well as the expiration of the guaranteed benefit for some GMAB riders. Nearly all contracts (98.9 percent) issued in 2014 remained in force at EOY.

Figure 4-21: GMAB Surrender Rate by Quarter of Contract Issue



Surrender Activity by Share Class and Surrender Charge

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 2014 was 27.0 percent — over five times the rate of contracts where charges exist (5.0 percent). The surrender rate of contracts that expired in previous years was 14.5 percent. Figure 4-22 illustrates the contract surrender rates for contracts by share classes while Figure 4-23 provides the cash value surrender rates. Two thirds of GMAB contracts, B-share and L-share combined, were within the surrender charge periods in 2014.

Contract surrender rate in GMAB contracts with surrender charges = **5.0%**.

Contracts surrendered where charges expired in previous years = **14.5%**.

Contracts surrendered where charges expired in the current year = **27.0%**.

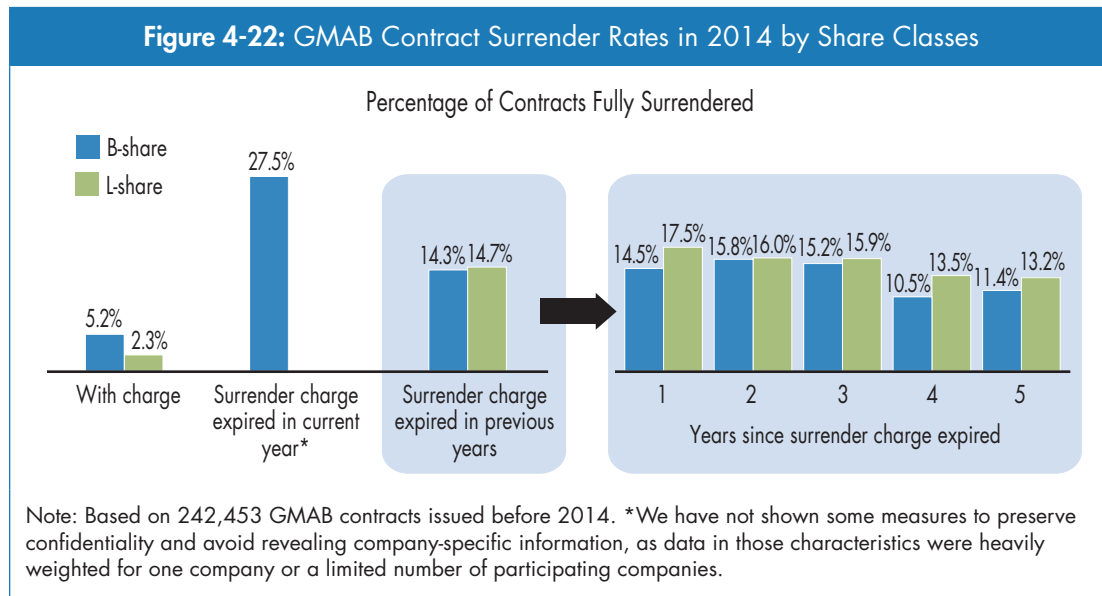
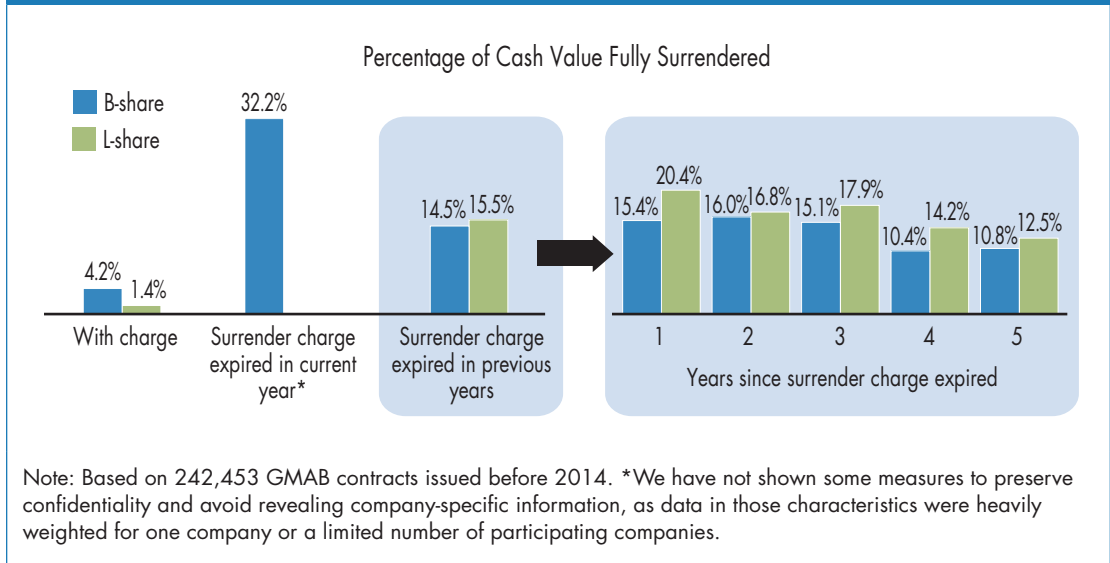


Figure 4-23: GMAB Cash Value Surrender Rates in 2014 by Share Classes



Contract surrender is influenced by the rate of surrender charge present. Naturally, contracts with higher penalties have lower surrender rates and vice versa (Figure 4-24). A third of GMAB contracts were free of surrender charges in 2014. Also, the contracts free of surrender charges accounted for 33 percent of total contract value of the contracts. Figure 4-25 provides the cash value surrender rates by presence of surrender charge.

Figure 4-24: GMAB Contract Surrender Rates in 2014 by Surrender Charge Percentage

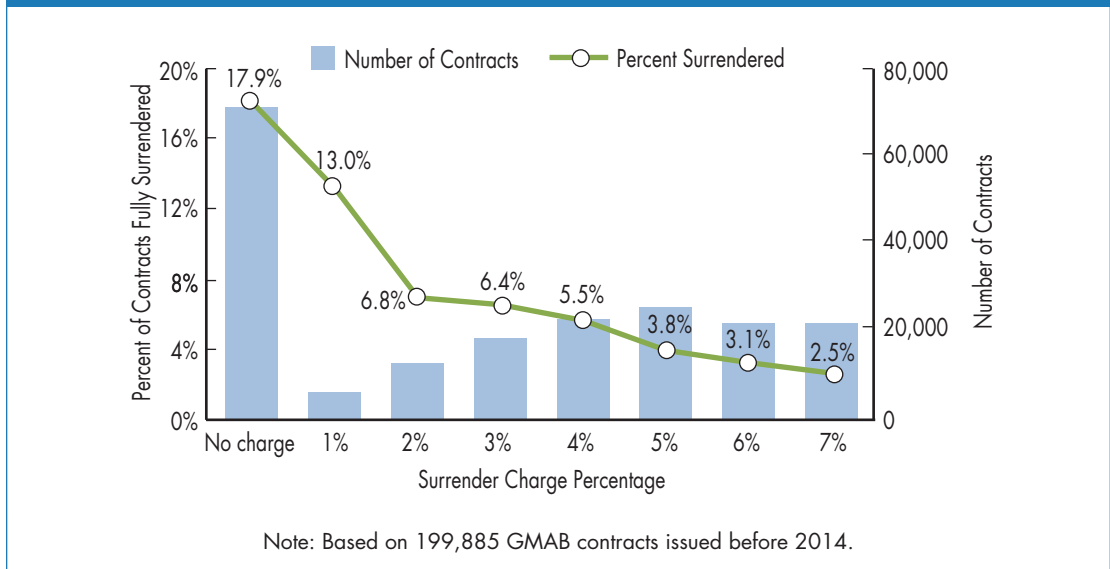
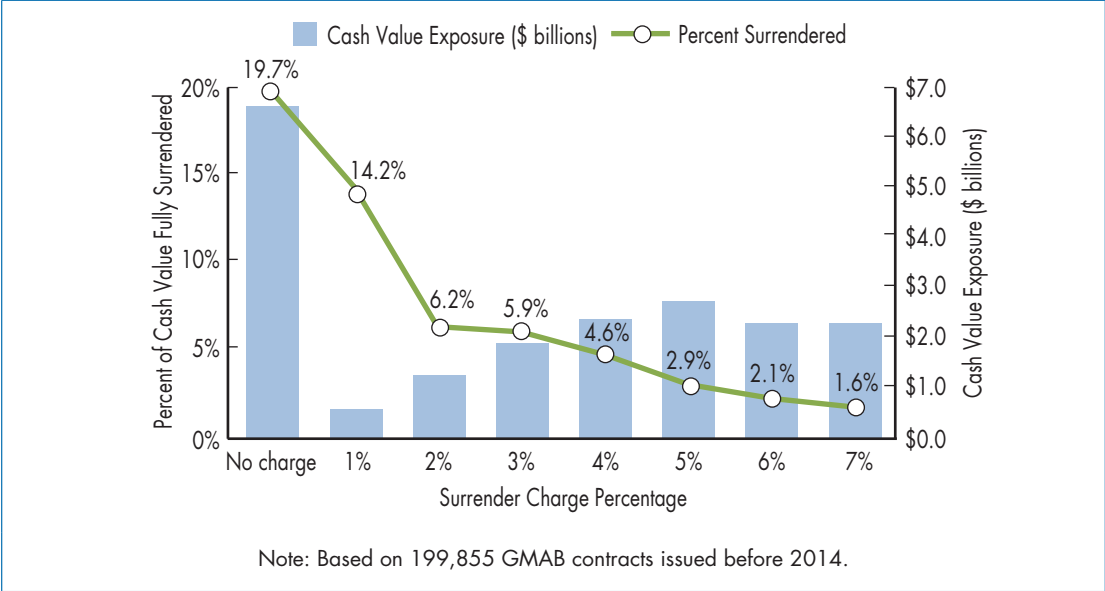


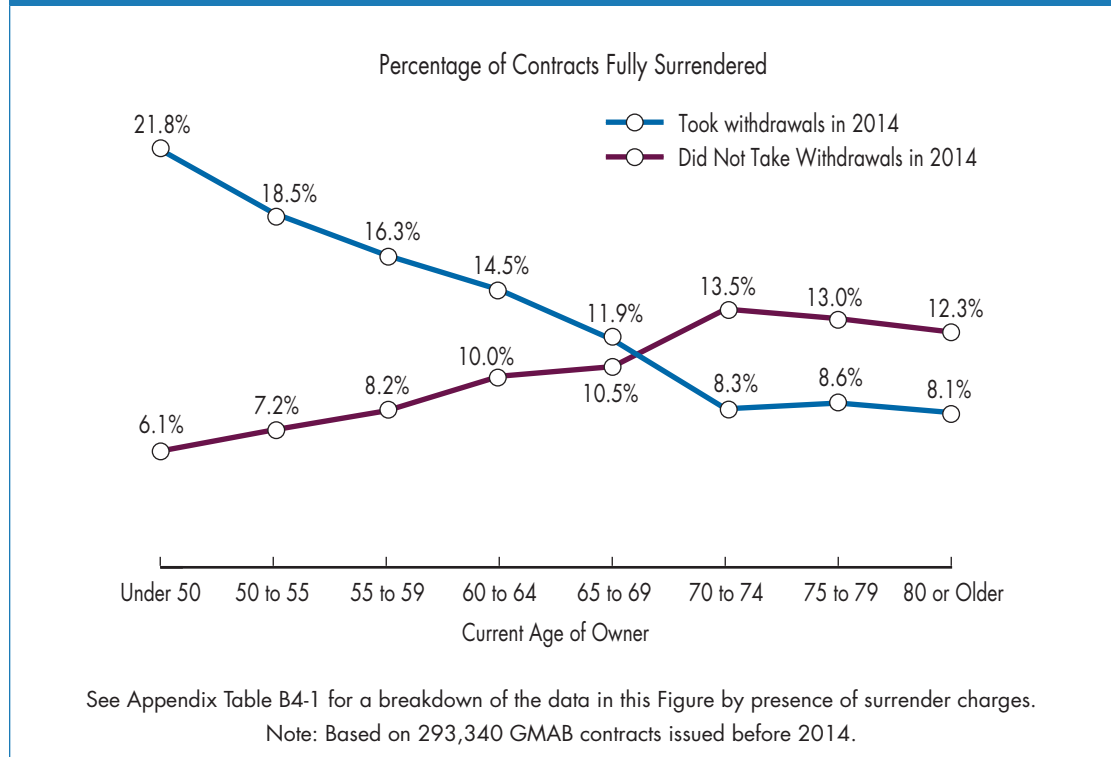
Figure 4-25: GMAB Cash Value Surrender Rates in 2014 by Surrender Charge Percentage



Surrender Activity by Owners Who Took Withdrawals

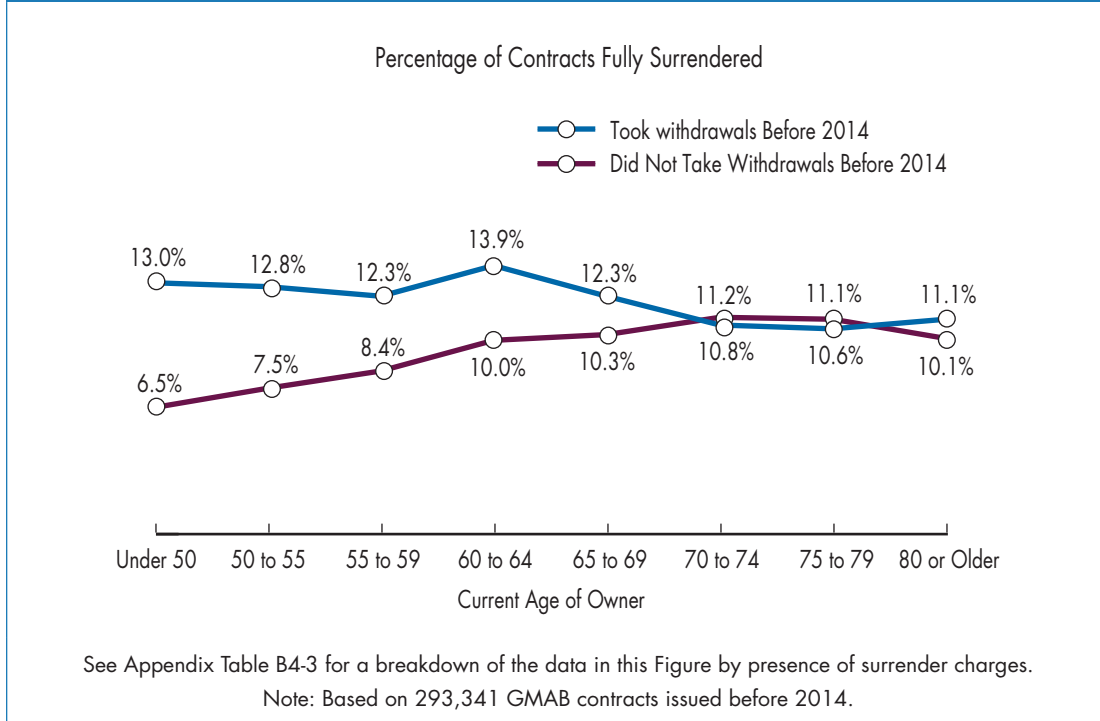
Higher GMAB surrender rates are associated with younger owners, particularly those under age 60 who took withdrawals before or in 2014. Even though younger owners own a significant portion of GMABs, some of them are taking large average withdrawals. It is likely that these younger owners are really taking partial surrenders. Owners under age 60 who took withdrawals in 2014 were also more likely to fully surrender their contracts compared to older owners (Figures 4-26).

Figure 4-26: GMAB Contract Surrender Rates in 2014, by Owners Who Took Withdrawals in 2014



Past withdrawals can also indicate whether younger owners are more likely to fully surrender contracts in the future. Figure 4-27 provides the contract surrender rates for owners who took withdrawals before 2014.

Figure 4-27: GMAB Contract Surrender Rates by Owners Who Took Withdrawals Before 2014



Figures 4-28 and 4-29 show the cash value surrender rates for owners taking withdrawals in 2014 and before 2014, respectively.

Figure 4-28: GMAB Cash Value Surrender Rates in 2014, by Owners Who Took Withdrawals in 2014

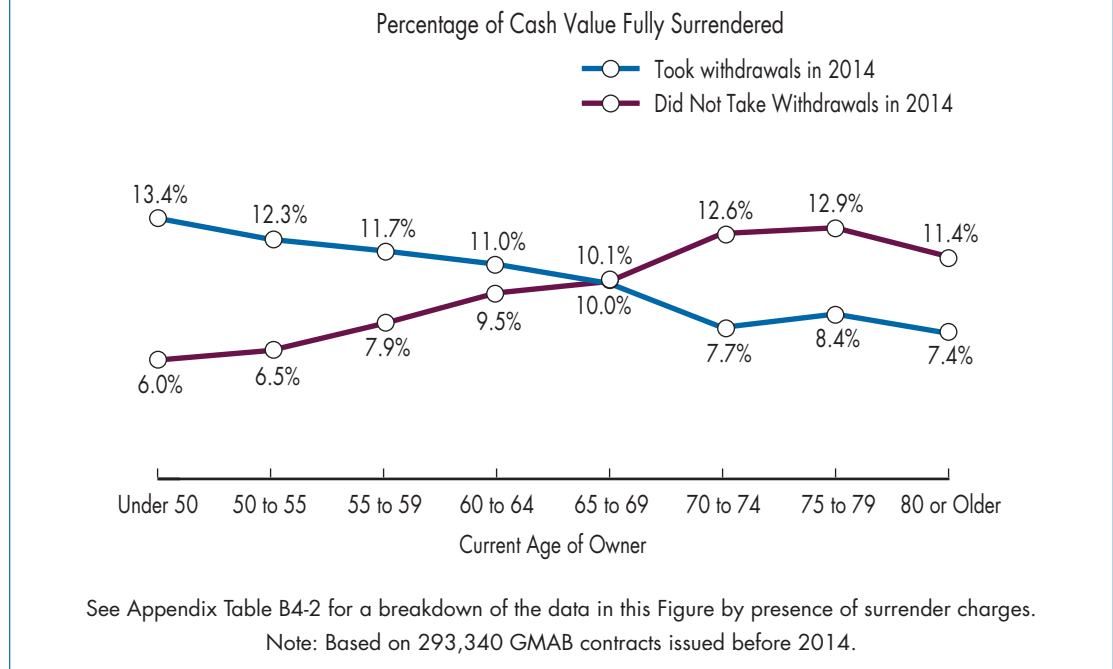
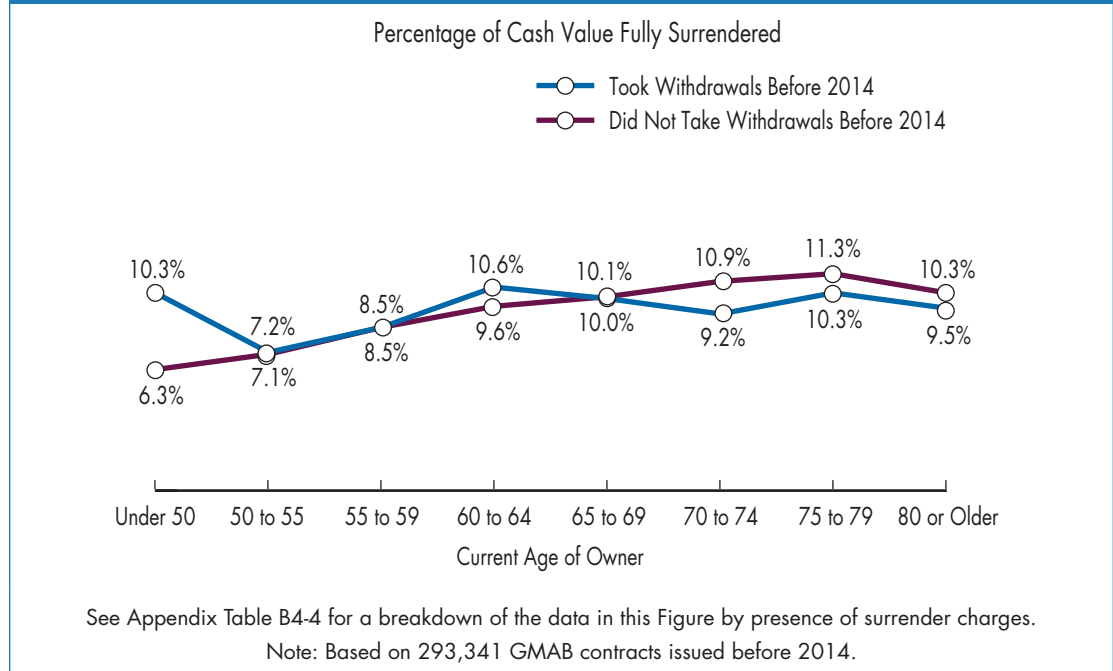


Figure 4-29: GMAB Cash Value Surrender Rates by Owners Who Took Withdrawals Before 2014



Many of these GMAB owners may have surrendered the contracts because the contract benefit matured. Benefit maturity 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 did not take any withdrawals in 2014. But for many younger owners, taking withdrawals may be an early indicator of full contract surrender. Figure 4-30 provides contract and cash value surrender rates in 2014 by year of benefit maturity. Surrender rates increase from benefit maturity years 2015 to 2017 and then slowly decline.

Figure 4-30: GMAB Surrender Rates in 2014 by Benefit Maturity Year

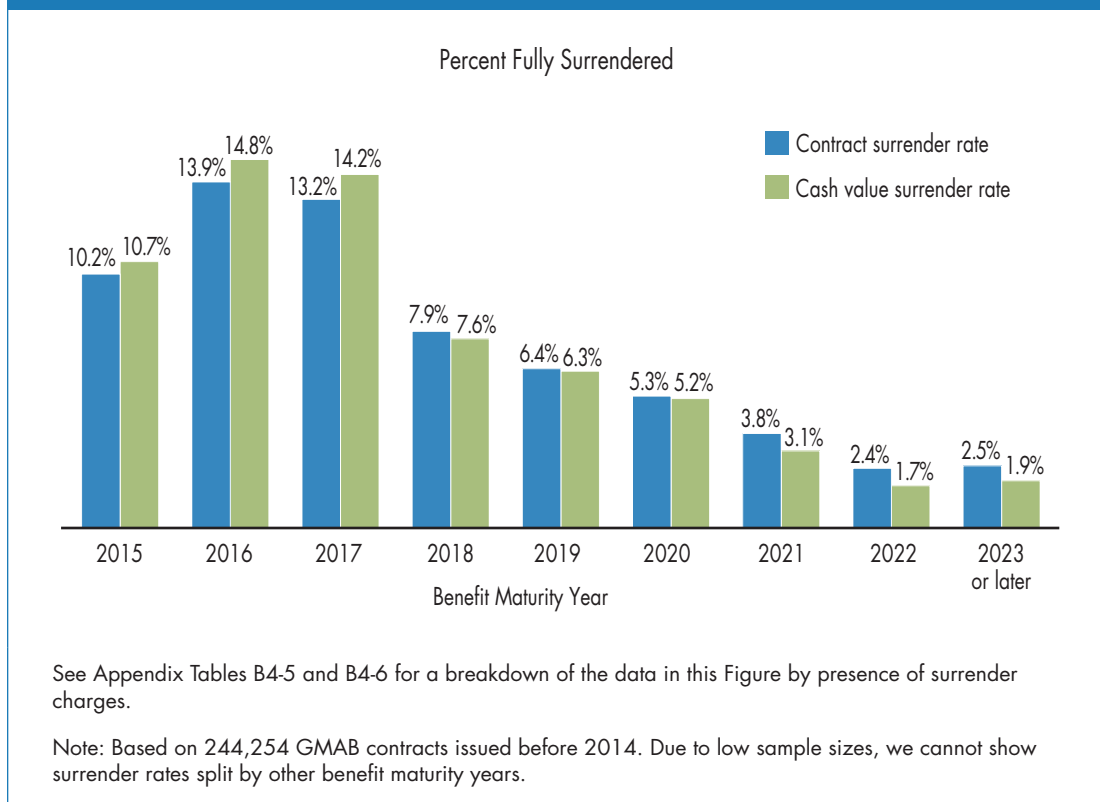
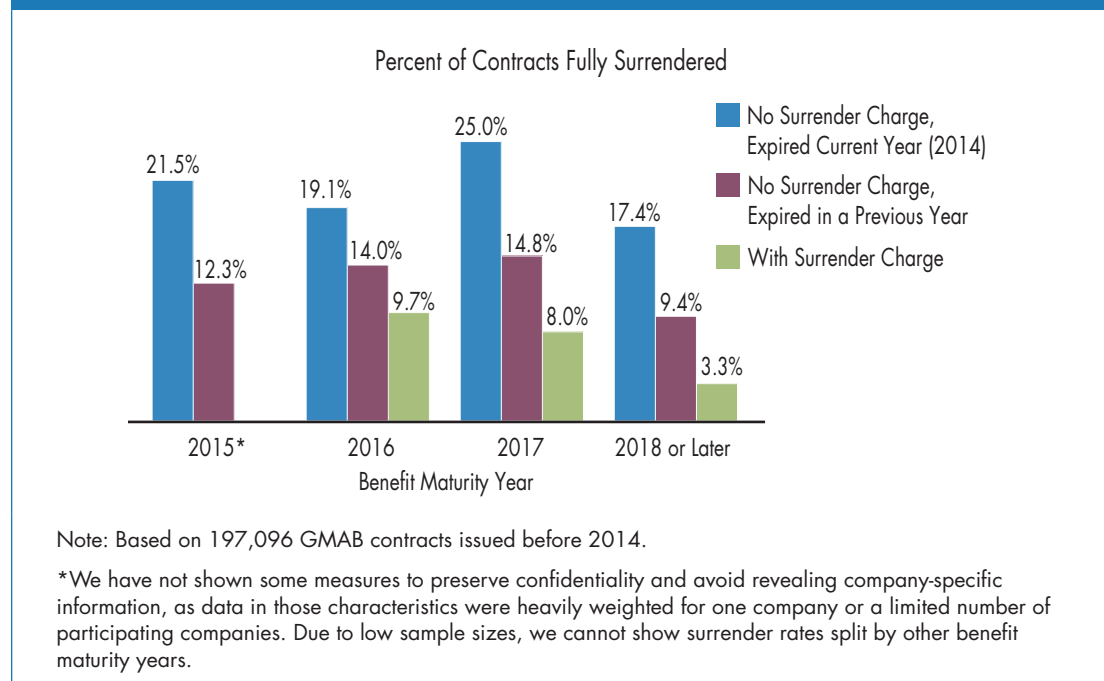


Figure 4-31 provides surrender rates for contracts where the surrender charge expired in 2014, before 2014, and those that still have a surrender charge by benefit maturity year. The surrender rates for contracts where the surrender charge expired in 2014 experience the shock lapse we see with other contracts in the year the surrender charge expires. Surrender rates for contracts where the surrender charge expired in previous years were around 9 to 15 percent. As we saw in Figures 4-22 and 4-23, surrender rates for GMABs are relatively high once the surrender charge expires. Surrender rates for contracts that still have a surrender charge are relatively low and remain in a range of about 3 to 10 percent. Two thirds of the GMAB contracts still had a surrender charge in 2014, 1 in 10 had surrender charges that expired in 2014, and a quarter had surrender charges expire in a previous year.

Figure 4-31: GMAB Contract Surrender Activity by Benefit Maturity Year and Presence of Surrender Charge

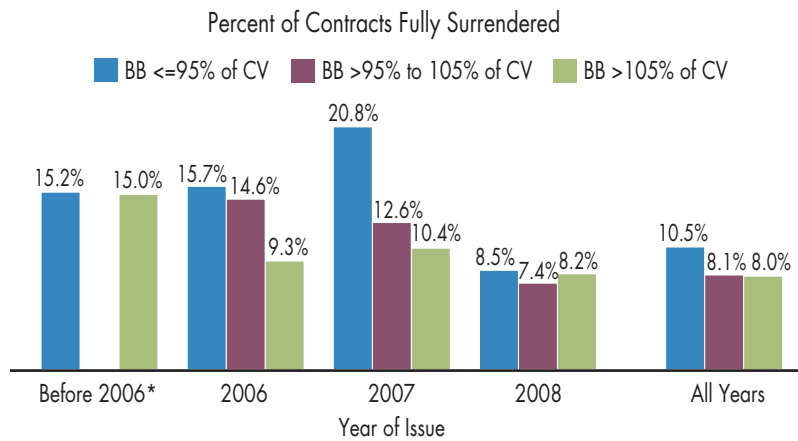


Surrender Activity by Amount the Benefit Base Exceeded the Contract Value

Another important analysis of surrender rates involves whether or not the GMAB benefit base amount exceeded the contract value. Controlling for year of issue, contracts where the contract value was greater than or equal to 95 percent of the benefit base generally had slightly higher surrender activity (Figures 4-32 and 4-33).

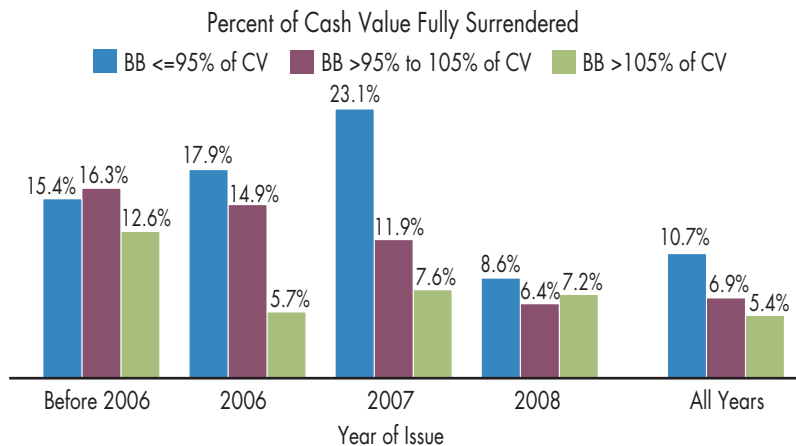
Other issues such as the expiration of the surrender charge or benefit maturity could explain some of the increased surrender activity.

Figure 4-32: GMAB Contract Surrender Activity by Amount The Benefit Base Exceeded the Contract Value



Note: Based on 290,018 GMAB contracts issued before 2014. *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 limited number of participating companies.

Figure 4-33: GMAB Cash Value Surrender Activity by Amount The Benefit Base Exceeded the Contract Value



Note: Based on 290,018 GMAB contracts issued before 2014.

Table 4-5 provides GMAB contract and cash value surrender rates for various categories.

Table 4-5: GMAB Surrender Rates		
	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
All contracts	9.5%	9.1%
Year of issue		
Before 2004	13.1%	12.5%
2004	20.3%	19.8%
2005	13.3%	14.3%
2006	14.9%	16.4%
2007	17.9%	19.6%
2008	8.1%	7.8%
2009	7.5%	7.0%
2010	5.1%	4.8%
2011	3.0%	2.2%
2012	2.1%	1.1%
2013	2.0%	1.3%
Age of owner		
Under 50	7.3%	6.8%
50 to 54	8.2%	7.1%
55 to 59	9.0%	8.5%
60 to 64	10.8%	9.8%
65 to 69	10.8%	10.1%
70 to 74	11.0%	10.1%
75 to 79	10.8%	10.7%
80 or older	10.6%	9.9%
Contract value, BOY 2014		
Under \$25,000	9.0%	9.0%
\$25,000 to \$49,999	9.1%	9.1%
\$50,000 to \$99,999	9.2%	9.3%
\$100,000 to \$249,999	8.7%	8.8%
\$250,000 to \$499,999	8.9%	8.7%
\$500,000 or higher	10.8%	9.7%

Table 4-5: GMAB Surrender Rates (continued)

	Percent of Contracts Surrendered	Percent of Cash Value Surrendered
Gender		
Male	9.9%	9.5%
Female	9.1%	8.6%
Share class		
B-share	9.0%	8.4%
L-share	13.0%	13.2%
Market type		
IRA	9.2%	8.5%
Nonqualified	10.1%	10.0%
Distribution Channel		
Career agent	5.3%	4.3%
Independent agent/independent B-D*		12.3%
Full-service national B-D	14.7%	15.1%
Bank	12.2%	13.2%

Note: Based on 293,363 GMAB contracts issued before 2014. 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 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

- Surrender activity is higher for older contracts and older owners.
- There is little difference between persistency in contracts funded by nonqualified and qualified money.
- There is even less difference based on gender or contract size.
- L-share contracts have higher surrender rates than B-share contracts.

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 — 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	Issued in 2013	Issued in 2014
Avg. mortality and expense charge	1.44%	1.45%	1.42%	1.45%	1.44%	1.37%	1.34%	1.38%	1.37%	1.50%
Average benefit fee	0.36%	0.43%	0.44%	0.59%	0.52%	0.62%	0.61%	0.53%	0.76%	0.65%
Average number of subaccounts	75	69	70	69	67	55	50	48	54	56
Product has fixed account										
Yes	93%	92%	91%	92%	88%	91%	88%	85%	85%	88%
No	7%	8%	9%	8%	12%	9%	12%	15%	15%	12%
Product still available as of 12-31-14										
Yes	18%	24%	37%	35%	41%	81%	96%	96%	96%	100%
No	82%	76%	63%	65%	59%	19%	4%	4%	4%	0%
Rider still available as of 12-31-14										
Yes	19%	25%	27%	29%	37%	55%	27%	34%	93%	100%
No	81%	75%	73%	71%	63%	45%	73%	66%	7%	0%
Cap on benefits										
Yes	41%	45%	39%	28%	35%	35%	50%	60%	39%	37%
No	59%	55%	61%	72%	65%	65%	50%	40%	61%	63%
Benefit fee basis*										
Contract value	36%	42%	39%	20%	12%	16%	19%	18%	33%	32%
Benefit base	14%	16%	18%	32%	33%	28%	37%	49%	63%	64%
VA subaccounts	49%	37%	40%	46%	54%	56%	44%	33%	4%	4%
Other	2%	5%	4%	2%	0%	0%	0%	0%	0%	0%
Average maximum age at election	81	81	80	80	80	80	78	78	80	75
Step-up if available										
Annually	75%	70%	73%	81%	82%	88%	81%	77%	82%	86%
Every 3 years	1%	1%	1%	15%	18%	12%	18%	23%	18%	14%
Every 5 years	24%	29%	25%	4%	0%	0%	0%	0%	0%	0%

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	Issued in 2013	Issued in 2014
Asset allocation restrictions										
Forced asset allocation model	34%	40%	39%	43%	37%	34%	48%	57%	35%	33%
Limitations on fund selection	2%	7%	6%	3%	2%	1%	0%	0%	0%	0%
Dynamic asset allocations	39%	34%	36%	37%	42%	45%	25%	7%	14%	11%
No, but may restrict	9%	10%	13%	15%	17%	18%	23%	31%	41%	45%
No restrictions	6%	1%	1%	0%	0%	0%	0%	0%	0%	0%
GMAB roll-up percent										
100% of premium	97%	97%	98%	99%	99%	98%	98%	95%	96%	96%
Over 100%	3%	3%	2%	1%	1%	2%	2%	5%	4%	4%
Waiting period										
5-year	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%
7-year	46%	34%	36%	27%	32%	36%	35%	31%	0%	0%
10-year	48%	65%	63%	72%	67%	62%	63%	51%	50%	71%
More than 10-year	2%	1%	1%	1%	1%	1%	2%	18%	50%	29%
Among contracts with maximum charge info. provided										
Standard rider charge	0.36%	0.42%	0.43%	0.59%	0.52%	0.62%	0.61%	0.53%	0.76%	0.74%
Maximum rider charge	0.65%	0.80%	0.80%	0.79%	0.71%	0.69%	0.68%	0.80%	1.56%	1.18%
*If the benefit fee was based on the higher of benefit base or contract value, then the basis categorization was determined for each individual contract.										
Note: Based on 312,475 GMAB contracts issued in or before 2014.										

Key Findings

- In 2014, almost two thirds of GMAB fees were based on the benefit base. On average, maximum fees in 2014 increased to 118 basis points.
- The average buyer of a VA with a GMAB in 2014 paid 65 basis points as the rider fee. Including the mortality and expense charges, the total charge was around 2.15 percent for contracts issued in 2014.
- All of the contracts issued in 2012 through 2014 had a 10-year waiting period or longer.
- Over the past few years, annual step-up options have become more common.

Participating Companies

AIG Companies

Ameritas Life

AXA US

CMFG Life Insurance Company

Guardian Life of America

Lincoln Financial Group

Massachusetts Mutual Life

MetLife

Minnesota Life

Nationwide

New York Life

Pacific Life

Phoenix Life Insurance Company

Principal Financial Group

Protective Life

Prudential Financial

RiverSource Life Insurance

Security Benefit Life

Thrivent Financial for Lutherans

Transamerica

Voya Financial

Appendix A: About the Survey

Twenty-one companies provided contract and product information for their VA GLB business that met the following criteria:

1. Were in force as of January 1, 2014, or were issued during 2014;
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 4.9 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)
- Contract 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

Table B1-1: GLWB Contract Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge

	With charge	No charge, expired current year	No charge, expired previous year
Did not take withdrawals in 2014			
Under age 50	2.5%	14.4%	7.9%
Age 50 to 54	1.9%	11.1%	7.1%
Age 55 to 59	1.7%	11.6%	6.4%
Age 60 to 64	1.9%	12.7%	7.0%
Age 65 to 69	1.9%	13.6%	7.5%
Age 70 to 74	2.3%	16.7%	8.5%
Age 75 to 79	2.5%	16.8%	8.9%
Age 80 or older	2.8%	15.1%	8.1%
Took withdrawals in 2014			
Under age 50	11.5%	—	—
Age 50 to 54	9.8%	—	—
Age 55 to 59	7.7%	20.8%	10.7%
Age 60 to 64	3.5%	13.2%	6.3%
Age 65 to 69	2.2%	9.8%	4.6%
Age 70 to 74	1.5%	8.0%	4.2%
Age 75 to 79	1.6%	7.7%	3.8%
Age 80 or older	1.6%	6.4%	4.0%
— Insufficient sample			
Note: Based on 2,564,529 GLWB contracts issued before 2014.			
We have not shown some results because of low sample size.			

Table B1-2: GLWB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge

	With charge	No charge, expired current year	No charge, expired previous year
Did not take withdrawals in 2014			
Under age 50	1.7%	16.8%	7.6%
Age 50 to 54	1.4%	10.6%	6.4%
Age 55 to 59	1.3%	11.7%	6.4%
Age 60 to 64	1.4%	12.5%	6.6%
Age 65 to 69	1.6%	13.2%	7.2%
Age 70 to 74	2.0%	16.8%	8.3%
Age 75 to 79	2.2%	17.7%	9.1%
Age 80 or older	2.6%	15.4%	8.1%
Took withdrawals in 2014			
Under age 50	7.7%	—	—
Age 50 to 54	5.9%	—	—
Age 55 to 59	5.0%	23.6%	10.0%
Age 60 to 64	2.2%	13.1%	6.1%
Age 65 to 69	1.6%	11.1%	4.8%
Age 70 to 74	1.3%	8.7%	4.4%
Age 75 to 79	1.4%	9.4%	4.1%
Age 80 or older	1.5%	7.8%	4.1%
— Insufficient sample			
Note: Based on 2,564,529 GLWB contracts issued before 2014.			
We have not shown some results because of low sample size.			

Table B1-3: GLWB Contract Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge

	With charge	No charge, expired current year	No charge, expired previous year
Did not take withdrawals before 2014			
Under age 50	2.3%	14.0%	7.8%
Age 50 to 54	1.8%	10.8%	7.0%
Age 55 to 59	1.6%	11.2%	6.1%
Age 60 to 64	1.7%	11.8%	6.5%
Age 65 to 69	1.7%	12.5%	6.6%
Age 70 to 74	1.7%	13.3%	6.5%
Age 75 to 79	1.8%	13.3%	6.6%
Age 80 or older	2.1%	11.9%	6.1%
Took withdrawals before 2014			
Under age 50	12.5%	—	—
Age 50 to 54	10.6%	—	13.1%
Age 55 to 59	9.2%	21.9%	12.2%
Age 60 to 64	5.2%	18.3%	8.8%
Age 65 to 69	3.2%	12.9%	6.4%
Age 70 to 74	2.3%	11.1%	5.6%
Age 75 to 79	2.2%	10.7%	5.4%
Age 80 or older	2.3%	9.1%	5.5%
— Insufficient sample			
Note: Based on 2,563,291 GLWB contracts issued before 2014.			
We have not shown some results because of low sample size.			

Table B1-4: GLWB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge

	With charge	No charge, expired current year	No charge, expired previous year
Did not take withdrawals before 2014			
Under age 50	1.7%	16.2%	7.8%
Age 50 to 54	1.4%	10.8%	6.6%
Age 55 to 59	1.3%	11.7%	6.4%
Age 60 to 64	1.4%	11.9%	6.4%
Age 65 to 69	1.4%	12.5%	6.7%
Age 70 to 74	1.6%	13.8%	6.8%
Age 75 to 79	1.7%	14.4%	7.2%
Age 80 or older	2.0%	12.7%	6.7%
Took withdrawals before 2014			
Under age 50	7.9%	—	—
Age 50 to 54	5.6%	—	10.9%
Age 55 to 59	5.0%	22.6%	9.9%
Age 60 to 64	2.6%	16.7%	7.0%
Age 65 to 69	2.1%	12.9%	5.7%
Age 70 to 74	1.8%	11.4%	5.4%
Age 75 to 79	1.9%	12.3%	5.4%
Age 80 or older	2.1%	10.4%	5.4%
— Insufficient sample			
Note: Based on 2,563,291 GLWB contracts issued before 2014.			
We have not shown some results because of low sample size.			

Table B1-5: GLWB Contract Surrender Rates by Owners Taking Withdrawals in Relation to Annual Benefit Maximum Allowed and by Presence of Surrender Charge

	With charge	Without charge
Age 60 to 69		
Under 75%	3.6%	19.4%
75% to 89.9%	2.3%	8.4%
90% to 109.9%	0.4%	1.2%
110% to 149.9%	1.6%	4.2%
150% to 199.9%	2.9%	6.6%
200% or more	8.9%	16.4%
Age 70 to 79		
Under 75%	2.9%	12.3%
75% to 89.9%	1.3%	5.3%
90% to 109.9%	0.5%	1.4%
110% to 149.9%	1.4%	4.0%
150% to 199.9%	2.2%	4.4%
200% or more	6.5%	13.2%
Age 80 or older		
Under 75%	5.7%	16.9%
75% to 89.9%	1.5%	3.8%
90% to 109.9%	0.4%	1.4%
110% to 149.9%	1.0%	3.0%
150% to 199.9%	3.1%	3.3%
200% or more	7.2%	14.3%
Note: Based on 600,538 GLWB contracts issued before 2014 that had withdrawals during 2014.		

Table B1-6: GLWB Cash Value Surrender Rates by Owners Taking Withdrawals in Relation to Annual Benefit Maximum Allowed and by Presence of Surrender Charge

	With charge	Without charge
Age 60 to 69		
Under 75%	3.1%	20.6%
75% to 89.9%	2.1%	8.0%
90% to 109.9%	0.3%	1.2%
110% to 149.9%	1.4%	4.6%
150% to 199.9%	2.3%	7.2%
200% or more	6.6%	19.6%
Age 70 to 79		
Under 75%	2.7%	14.2%
75% to 89.9%	1.4%	5.9%
90% to 109.9%	0.4%	1.4%
110% to 149.9%	1.2%	4.2%
150% to 199.9%	2.1%	4.6%
200% or more	5.6%	17.0%
Age 80 or older		
Under 75%	5.5%	17.4%
75% to 89.9%	1.1%	4.7%
90% to 109.9%	0.4%	1.6%
110% to 149.9%	0.8%	3.3%
150% to 199.9%	2.6%	3.7%
200% or more	5.4%	13.2%
Note: Based on 600,538 GLWB contracts issued before 2014 that had withdrawals during 2014.		

Table B1-7: GLWB Contract Surrender Rates by Withdrawal Method and by Presence of Surrender Charge

	With charge	Without charge
Did not take systematic withdrawals		
Age 55 to 59	9.6%	18.8%
Age 60 to 64	7.3%	16.0%
Age 65 to 69	5.4%	13.6%
Age 70 to 74	2.7%	9.1%
Age 75 to 79	3.0%	8.2%
Age 80 or older	3.3%	8.4%
Took systematic withdrawals		
Age 55 to 59	2.9%	5.7%
Age 60 to 64	1.5%	4.7%
Age 65 to 69	1.3%	4.2%
Age 70 to 74	1.2%	4.1%
Age 75 to 79	1.2%	3.9%
Age 80 or older	1.3%	3.8%

Note: Based on 640,581 GLWB contracts issued before 2014 that had withdrawals during 2014.

Table B1-8: GLWB Cash Value Surrender Rates by Withdrawal Method and by Presence of Surrender Charge

	With charge	Without charge
Did not take systematic withdrawals		
Age 55 to 59	7.2%	22.1%
Age 60 to 64	5.3%	19.0%
Age 65 to 69	4.0%	16.0%
Age 70 to 74	2.2%	9.7%
Age 75 to 79	2.5%	9.4%
Age 80 or older	2.8%	9.2%
Took systematic withdrawals		
Age 55 to 59	2.4%	6.3%
Age 60 to 64	1.1%	4.5%
Age 65 to 69	1.1%	4.6%
Age 70 to 74	1.1%	4.4%
Age 75 to 79	1.1%	4.2%
Age 80 or older	1.2%	4.0%
Note: Based on 640,581 GLWB contracts issued before 2014 that had withdrawals during 2014.		

Table B2-1: GMWB Contract Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge

	With charge	No charge, expired current year	No charge, expired previous year
Did not take withdrawals in 2014			
Under age 50	4.2%	16.2%	9.8%
Age 50 to 54	4.7%	20.2%	11.3%
Age 55 to 59	4.5%	22.7%	12.3%
Age 60 to 64	4.8%	23.3%	14.1%
Age 65 to 69	5.2%	23.7%	14.3%
Age 70 to 74	6.4%	28.5%	14.9%
Age 75 to 79	5.9%	27.3%	13.4%
Age 80 or older	6.2%	18.2%	10.6%
Took withdrawals in 2014			
Under age 50	—	—	—
Age 50 to 54	—	—	—
Age 55 to 59	4.3%	—	10.7%
Age 60 to 64	3.3%	16.7%	9.9%
Age 65 to 69	2.3%	12.8%	7.2%
Age 70 to 74	2.2%	10.2%	6.1%
Age 75 to 79	2.2%	9.1%	5.2%
Age 80 or older	2.4%	7.9%	4.5%
— Insufficient sample			
Note: Based on 210,145 GMWB contracts issued before 2014.			
We have not shown some results because of low sample size.			

Table B2-2: GMWB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge

	With charge	No charge, expired current year	No charge, expired previous year
Did not take withdrawals in 2014			
Under age 50	4.2%	28.1%	11.3%
Age 50 to 54	5.7%	26.0%	12.4%
Age 55 to 59	4.5%	29.5%	13.8%
Age 60 to 64	5.2%	24.5%	16.2%
Age 65 to 69	4.2%	27.8%	15.6%
Age 70 to 74	6.6%	32.7%	15.8%
Age 75 to 79	4.6%	28.5%	14.1%
Age 80 or older	4.9%	21.0%	10.0%
Took withdrawals in 2014			
Under age 50	—	—	—
Age 50 to 54	—	—	—
Age 55 to 59	2.1%	—	11.0%
Age 60 to 64	2.7%	19.1%	10.5%
Age 65 to 69	2.3%	16.3%	8.1%
Age 70 to 74	1.9%	13.0%	6.7%
Age 75 to 79	2.4%	13.6%	6.0%
Age 80 or older	2.2%	9.3%	4.6%
— Insufficient sample			
Note: Based on 210,145 GMWB contracts issued before 2014.			
We have not shown some results because of low sample size.			

Table B2-3: GMWB Contract Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge

	With charge	No charge, expired current year	No charge, expired previous year
Did not take withdrawals before 2014			
Under age 50	3.8%	15.6%	9.2%
Age 50 to 54	4.1%	20.5%	10.3%
Age 55 to 59	4.1%	20.8%	12.1%
Age 60 to 64	4.4%	21.1%	13.5%
Age 65 to 69	4.3%	21.6%	13.2%
Age 70 to 74	4.6%	21.0%	11.8%
Age 75 to 79	4.6%	21.7%	10.0%
Age 80 or older	4.0%	11.8%	7.9%
Took withdrawals before 2014			
Under age 50	—	—	—
Age 50 to 54	—	—	—
Age 55 to 59	6.1%	—	12.2%
Age 60 to 64	4.4%	22.2%	12.1%
Age 65 to 69	3.7%	16.6%	9.6%
Age 70 to 74	3.1%	14.4%	8.0%
Age 75 to 79	2.9%	12.3%	7.1%
Age 80 or older	3.4%	11.2%	6.4%
— Insufficient sample			
Note: Based on 210,143 GMWB contracts issued before 2014.			
We have not shown some results because of low sample size.			

Table B2-4: GMWB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge

	With charge	No charge, expired current year	No charge, expired previous year
Did not take withdrawals before 2014			
Under age 50	3.8%	27.2%	10.7%
Age 50 to 54	5.4%	26.5%	11.2%
Age 55 to 59	4.2%	27.2%	13.7%
Age 60 to 64	4.9%	22.6%	15.6%
Age 65 to 69	3.5%	23.9%	14.5%
Age 70 to 74	4.6%	24.6%	13.2%
Age 75 to 79	4.0%	25.8%	10.5%
Age 80 or older	3.5%	14.2%	7.5%
Took withdrawals before 2014			
Under age 50	—	—	—
Age 50 to 54	—	—	—
Age 55 to 59	3.4%	—	12.1%
Age 60 to 64	3.3%	22.8%	12.2%
Age 65 to 69	3.1%	21.1%	10.0%
Age 70 to 74	2.9%	17.4%	8.3%
Age 75 to 79	2.7%	15.6%	8.2%
Age 80 or older	2.9%	13.9%	6.6%
— Insufficient sample			
Note: Based on 210,143 GMWB contracts issued before 2014.			
We have not shown some results because of low sample size.			

Table B2-5: GMWB Contract Surrender Rates by Owners Taking Withdrawals in Relation to Annual Benefit Maximum Allowed and by Presence of Surrender Charge

	With charge	Without charge
Age 60 to 69		
Under 75%	5.8%	25.3%
75% to 89.9%	1.6%	5.3%
90% to 109.9%	0.7%	2.2%
110% to 149.9%	1.7%	5.7%
150% to 199.9%	2.1%	6.1%
200% or more	6.4%	14.8%
Age 70 to 79		
Under 75%	3.3%	13.3%
75% to 89.9%	2.6%	5.5%
90% to 109.9%	0.5%	1.9%
110% to 149.9%	1.6%	4.9%
150% to 199.9%	1.3%	3.4%
200% or more	7.8%	11.0%
<p>Note: Based on 70,055 GMWB contracts issued before 2014 that had withdrawals during 2014. We have not shown measures related to owners under age 60 or age 80 or older because of low sample size.</p>		

Table B2-6: GMWB Cash Value Surrender Rates by Owners Taking Withdrawals in Relation to Annual Benefit Maximum Allowed and by Presence of Surrender Charge

	With charge	Without charge
Age 60 to 69		
Under 75%	6.2%	26.5%
75% to 89.9%	1.7%	4.3%
90% to 109.9%	0.5%	2.3%
110% to 149.9%	2.2%	6.3%
150% to 199.9%	1.0%	7.2%
200% or more	5.2%	17.9%
Age 70 to 79		
Under 75%	3.6%	14.7%
75% to 89.9%	2.4%	6.7%
90% to 109.9%	0.4%	2.4%
110% to 149.9%	1.8%	5.9%
150% to 199.9%	1.1%	4.2%
200% or more	6.0%	14.2%
<p>Note: Based on 70,055 GMWB contracts issued before 2014 that had withdrawals during 2014. We have not shown measures related to owners under age 60 or age 80 or older because of low sample size.</p>		

Table B2-7: GMWB Contract Surrender Rates by Withdrawal Method and by Presence of Surrender Charge

	With charge	Without charge
Did not take systematic withdrawals		
Age 55 to 59	7.5%	15.9%
Age 60 to 64	5.0%	17.3%
Age 65 to 69	3.9%	12.6%
Age 70 to 74	3.4%	10.3%
Age 75 to 79	3.3%	10.1%
Age 80 or older	4.3%	8.2%
Took systematic withdrawals		
Age 55 to 59	1.9%	7.6%
Age 60 to 64	2.1%	8.5%
Age 65 to 69	1.7%	7.0%
Age 70 to 74	1.7%	5.9%
Age 75 to 79	1.8%	5.0%
Age 80 or older	1.9%	4.5%
— Insufficient sample		
Note: Based on 100,779 GMWB contracts issued before 2014 that had withdrawals during 2014.		

Table B2-8: GMWB Cash Value Surrender Rates by Withdrawal Method and by Presence of Surrender Charge

	With charge	Without charge
Did not take systematic withdrawals		
Age 55 to 59	3.9%	19.0%
Age 60 to 64	4.1%	19.1%
Age 65 to 69	3.9%	15.0%
Age 70 to 74	2.7%	11.4%
Age 75 to 79	3.3%	10.5%
Age 80 or older	3.8%	8.7%
Took systematic withdrawals		
Age 55 to 59	1.2%	9.3%
Age 60 to 64	2.1%	9.9%
Age 65 to 69	1.7%	8.3%
Age 70 to 74	1.5%	6.8%
Age 75 to 79	2.0%	6.4%
Age 80 or older	1.8%	4.6%
— Insufficient sample		
Note: Based on 100,779 GMWB contracts issued before 2014 that had withdrawals during 2014.		

Table B3-1: GMIB Contract Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge

	No charge, expired current year	No charge, expired previous year
Did not take withdrawals in 2014		
Under age 50	7.9%	6.2%
Age 50 to 54	7.6%	6.2%
Age 55 to 59	7.9%	5.8%
Age 60 to 64	9.6%	6.9%
Age 65 to 69	9.5%	6.8%
Age 70 to 74	10.6%	7.8%
Age 75 to 79	11.2%	6.9%
Age 80 or older	10.4%	8.7%
Took withdrawals in 2014		
Under age 50	—	10.5%
Age 50 to 54	—	8.9%
Age 55 to 59	10.9%	7.5%
Age 60 to 64	8.8%	5.1%
Age 65 to 69	6.6%	3.3%
Age 70 to 74	5.5%	3.1%
Age 75 to 79	5.3%	3.1%
Age 80 or older	6.4%	4.8%
— Insufficient sample		
Note: Based on 769,287 GMIB contracts issued before 2014.		
We have not shown some results because of low sample size, and we are not showing results for contracts with surrender charges in effect because a single company represents a significant portion of the exposures.		

Table B3-2: GMIB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge

	No charge, expired current year	No charge, expired previous year
Did not take withdrawals in 2014		
Under age 50	8.3%	5.6%
Age 50 to 54	7.6%	5.3%
Age 55 to 59	7.8%	5.2%
Age 60 to 64	9.3%	5.9%
Age 65 to 69	9.3%	6.0%
Age 70 to 74	11.1%	7.1%
Age 75 to 79	11.8%	6.6%
Age 80 or older	10.0%	8.5%
Took withdrawals in 2014		
Under age 50	—	5.8%
Age 50 to 54	—	5.3%
Age 55 to 59	8.9%	4.7%
Age 60 to 64	7.4%	3.7%
Age 65 to 69	6.8%	2.6%
Age 70 to 74	5.7%	2.7%
Age 75 to 79	5.6%	3.1%
Age 80 or older	7.8%	4.8%
— Insufficient sample		
Note: Based on 769,287 GMIB contracts issued before 2014.		
We have not shown some results because of low sample size, and we are not showing results for contracts with surrender charges in effect because a single company represents a significant portion of the exposures.		

Table B3-3: GMIB Contract Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge

	No charge, expired current year	No charge, expired previous year
Did not take withdrawals before 2014		
Under age 50	7.6%	5.9%
Age 50 to 54	7.3%	5.8%
Age 55 to 59	7.4%	5.5%
Age 60 to 64	8.8%	6.3%
Age 65 to 69	8.8%	6.1%
Age 70 to 74	8.4%	6.0%
Age 75 to 79	8.7%	5.1%
Age 80 or older	8.5%	6.9%
Took withdrawals before 2014		
Under age 50	13.4%	9.8%
Age 50 to 54	11.8%	9.5%
Age 55 to 59	12.8%	8.2%
Age 60 to 64	11.8%	7.2%
Age 65 to 69	8.1%	4.9%
Age 70 to 74	7.2%	4.6%
Age 75 to 79	7.1%	4.4%
Age 80 or older	8.3%	6.8%
<p>Note: Based on 767,354 GMIB contracts issued before 2014. We are not showing results for contracts with surrender charges in effect because a single company represents a significant portion of the exposures.</p>		

Table B3-4: GMIB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge

	No charge, expired current year	No charge, expired previous year
Did not take withdrawals before 2014		
Under age 50	7.9%	5.5%
Age 50 to 54	7.6%	5.1%
Age 55 to 59	7.3%	5.3%
Age 60 to 64	8.7%	5.6%
Age 65 to 69	8.9%	5.6%
Age 70 to 74	9.0%	5.6%
Age 75 to 79	8.9%	5.3%
Age 80 or older	8.8%	7.1%
Took withdrawals before 2014		
Under age 50	12.5%	6.5%
Age 50 to 54	9.7%	6.6%
Age 55 to 59	10.7%	4.8%
Age 60 to 64	9.3%	4.5%
Age 65 to 69	7.6%	3.5%
Age 70 to 74	7.1%	3.7%
Age 75 to 79	7.6%	4.0%
Age 80 or older	9.1%	6.7%
<p>Note: Based on 767,354 GMIB contracts issued before 2014. We are not showing results for contracts with surrender charges in effect because a single company represents a significant portion of the exposures.</p>		

Table B3-5: GMIB Contract Surrender Rates by Withdrawal Method and by Presence of Surrender Charge

	Without charge
Did not take systematic withdrawals	
Under age 50	13.6%
Age 50 to 54	11.8%
Age 55 to 59	12.6%
Age 60 to 64	11.1%
Age 65 to 69	8.3%
Age 70 to 74	6.1%
Age 75 to 79	5.8%
Age 80 or older	8.1%
Took systematic withdrawals	
Under age 50	—
Age 50 to 54	—
Age 55 to 59	3.2%
Age 60 to 64	3.1%
Age 65 to 69	2.5%
Age 70 to 74	2.8%
Age 75 to 79	2.8%
Age 80 or older	4.3%
— Insufficient sample	
Note: Based on 258,161 GMIB contracts issued before 2014 that had withdrawals during 2014.	
We have not shown some results because of low sample size, and we are not showing results for contracts with surrender charges in effect because a single company represents a significant portion of the exposures.	

Table B3-6: GMIB Cash Value Surrender Rates by Withdrawal Method and by Presence of Surrender Charge

	Without charge
Did not take systematic withdrawals	
Under age 50	9.3%
Age 50 to 54	10.7%
Age 55 to 59	10.5%
Age 60 to 64	9.0%
Age 65 to 69	6.9%
Age 70 to 74	5.0%
Age 75 to 79	5.5%
Age 80 or older	7.6%
Took systematic withdrawals	
Under age 50	—
Age 50 to 54	—
Age 55 to 59	2.6%
Age 60 to 64	2.7%
Age 65 to 69	2.5%
Age 70 to 74	2.6%
Age 75 to 79	2.8%
Age 80 or older	4.3%
— Insufficient sample	
Note: Based on 258,161 GMIB contracts issued before 2014 that had withdrawals during 2014.	
We have not shown some results because of low sample size, and we are not showing results for contracts with surrender charges in effect because a single company represents a significant portion of the exposures.	

Table B4-1: GMAB Contract Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge

	With charge	Without charge
Did not take withdrawals in 2014		
Under age 50	4.2%	13.6%
Age 50 to 54	4.1%	15.7%
Age 55 to 59	4.3%	17.2%
Age 60 to 64	4.9%	20.3%
Age 65 to 69	5.2%	20.1%
Age 70 to 74	6.8%	22.7%
Age 75 to 79	6.4%	20.1%
Age 80 or older	7.4%	15.3%
Took withdrawals in 2014		
Under age 50	20.1%	—
Age 50 to 54	15.3%	—
Age 55 to 59	11.1%	30.7%
Age 60 to 64	9.6%	25.4%
Age 65 to 69	7.7%	18.7%
Age 70 to 74	4.7%	12.1%
Age 75 to 79	5.5%	10.9%
Age 80 or older	5.5%	9.5%
— Insufficient sample		
Note: Based on 293,339 GMAB contracts issued before 2014.		
We have not shown some results because of low sample size.		

Table B4-2: GMAB Cash Value Surrender Rates by Owners Taking Withdrawals in 2014 and by Presence of Surrender Charge

	With charge	Without charge
Did not take withdrawals in 2014		
Under age 50	3.1%	18.6%
Age 50 to 54	3.2%	17.2%
Age 55 to 59	3.7%	19.7%
Age 60 to 64	4.3%	21.9%
Age 65 to 69	4.6%	21.5%
Age 70 to 74	5.6%	23.4%
Age 75 to 79	6.0%	21.3%
Age 80 or older	5.7%	15.3%
Took withdrawals in 2014		
Under age 50	11.2%	—
Age 50 to 54	8.7%	—
Age 55 to 59	6.2%	32.0%
Age 60 to 64	6.4%	24.5%
Age 65 to 69	5.7%	18.4%
Age 70 to 74	3.8%	12.5%
Age 75 to 79	4.7%	11.8%
Age 80 or older	5.3%	8.6%
— Insufficient sample		
Note: Based on 293,339 GMAB contracts issued before 2014.		
We have not shown some results because of low sample size.		

Table B4-3: GMAB Contract Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge

	With charge	Without charge
Did not take withdrawals before 2014		
Under age 50	4.5%	14.3%
Age 50 to 54	4.3%	16.6%
Age 55 to 59	4.4%	18.3%
Age 60 to 64	4.9%	20.7%
Age 65 to 69	4.9%	20.6%
Age 70 to 74	5.3%	20.2%
Age 75 to 79	5.0%	18.6%
Age 80 or older	5.6%	13.0%
Took withdrawals before 2014		
Under age 50	11.9%	16.4%
Age 50 to 54	10.8%	17.4%
Age 55 to 59	9.0%	18.9%
Age 60 to 64	9.1%	22.4%
Age 65 to 69	8.2%	18.0%
Age 70 to 74	6.6%	14.7%
Age 75 to 79	7.0%	13.1%
Age 80 or older	7.9%	12.5%
Note: Based on 293,341 GMAB contracts issued before 2014.		

Table B4-4: GMAB Cash Value Surrender Rates by Owners Taking Withdrawals Before 2014 and by Presence of Surrender Charge

	With charge	Without charge
Did not take withdrawals before 2014		
Under age 50	3.5%	18.5%
Age 50 to 54	3.7%	18.6%
Age 55 to 59	3.9%	21.5%
Age 60 to 64	4.4%	22.6%
Age 65 to 69	4.6%	22.1%
Age 70 to 74	4.4%	21.7%
Age 75 to 79	4.9%	20.2%
Age 80 or older	5.1%	14.1%
Took withdrawals before 2014		
Under age 50	6.8%	22.9%
Age 50 to 54	5.0%	14.6%
Age 55 to 59	5.0%	19.0%
Age 60 to 64	6.2%	22.0%
Age 65 to 69	5.7%	17.6%
Age 70 to 74	5.1%	13.8%
Age 75 to 79	6.1%	13.7%
Age 80 or older	6.2%	11.3%
Note: Based on 293,341 GMAB contracts issued before 2014.		

Table B4-5: GMAB Contract Surrender Rates by Benefit Maturity Year and by Presence of Surrender Charge

	With charge	Without charge
2014	—	—
2015	—	13.2%
2016	9.7%	15.8%
2017	8.0%	19.8%
2018	5.9%	15.5%
2019	4.7%	16.1%
2020	3.7%	15.3%
2021	2.9%	11.6%
2022	2.1%	5.0%
2023 or later	1.9%	5.8%

— Insufficient sample
 Note: Based on 277,136 GMAB contracts issued before 2014.
 Due to low sample sizes, we cannot show surrender rates split by other benefit maturity years.

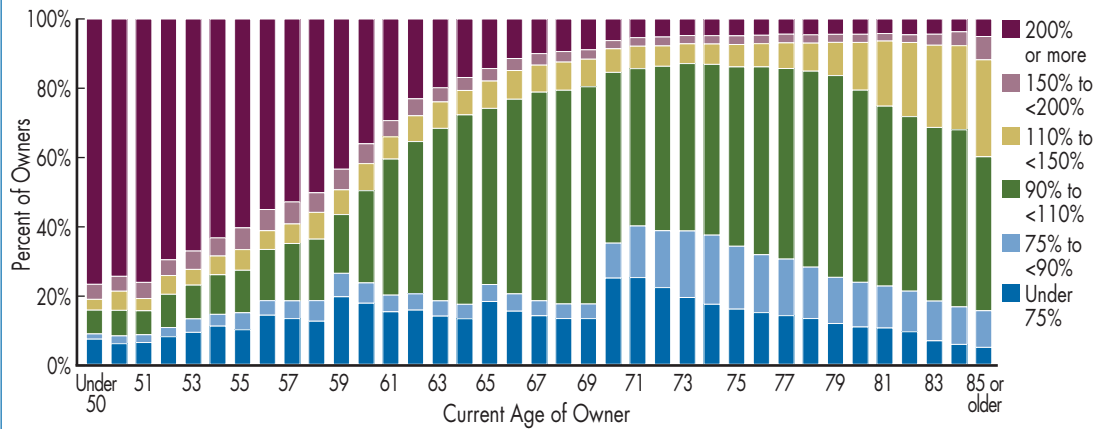
Table B4-6: GMAB Cash Value Surrender Rates by Benefit Maturity Year and by Presence of Surrender Charge

	With charge	Without charge
2014	—	—
2015	—	14.4%
2016	8.3%	18.0%
2017	7.6%	22.2%
2018	5.2%	16.8%
2019	4.6%	16.0%
2020	2.9%	18.1%
2021	2.1%	12.2%
2022	1.2%	5.7%
2023 or later	1.2%	5.7%

— Insufficient sample
 Note: Based on 277,136 GMAB contracts issued before 2014.
 Due to low sample sizes, we cannot show surrender rates split by other benefit maturity years.

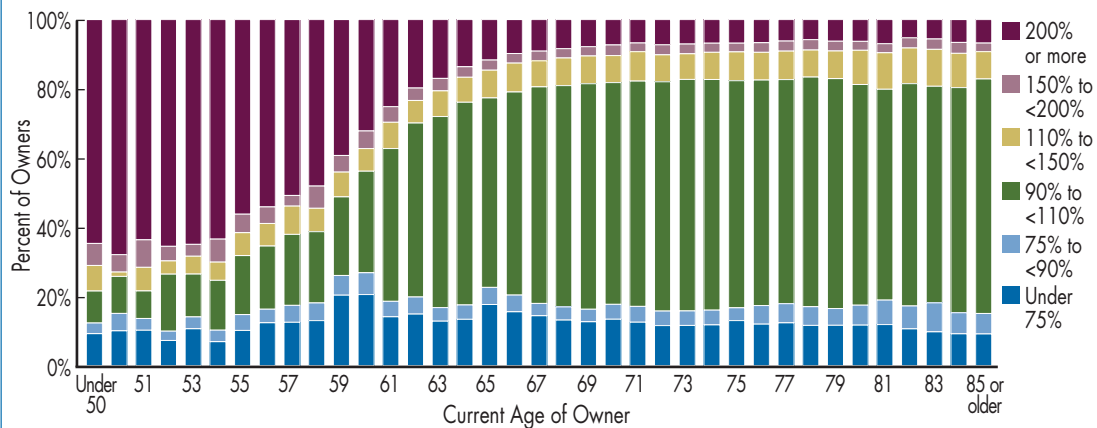
Appendix C

Figure C1-1: GLWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Traditional IRA Only



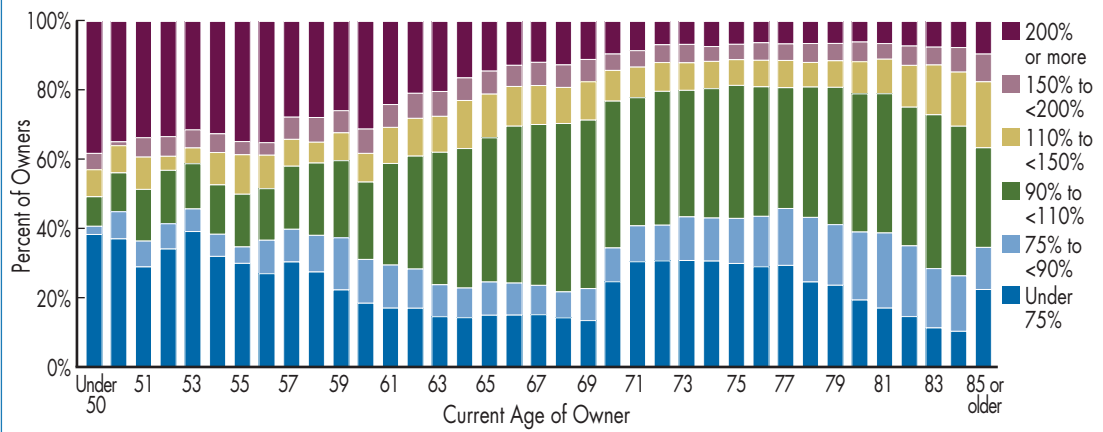
Note: Based on 420,201 IRA GLWB contracts issued before 2014, still in force at EOY 2014, and with withdrawals in 2014.

Figure C1-2: GLWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Nonqualified Only



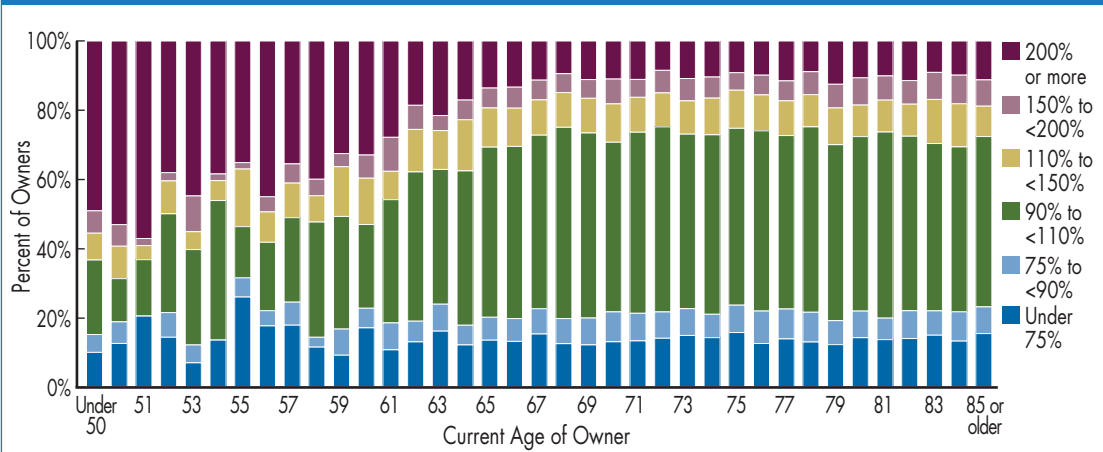
Note: Based on 159,564 Nonqualified IRA GLWB contracts issued before 2014, still in force at EOY 2014, and with withdrawals in 2014.

Figure C2-1: GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Traditional IRA Only



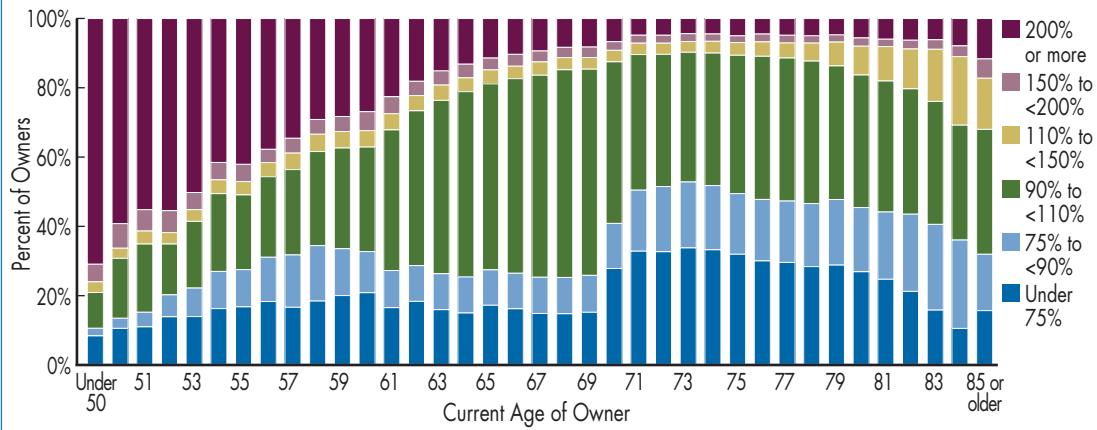
Note: Based on 64,599 IRA GMWB contracts issued before 2014 and remaining in force at EOY 2014 that had withdrawals.

Figure C2-2: GMWB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Nonqualified Only



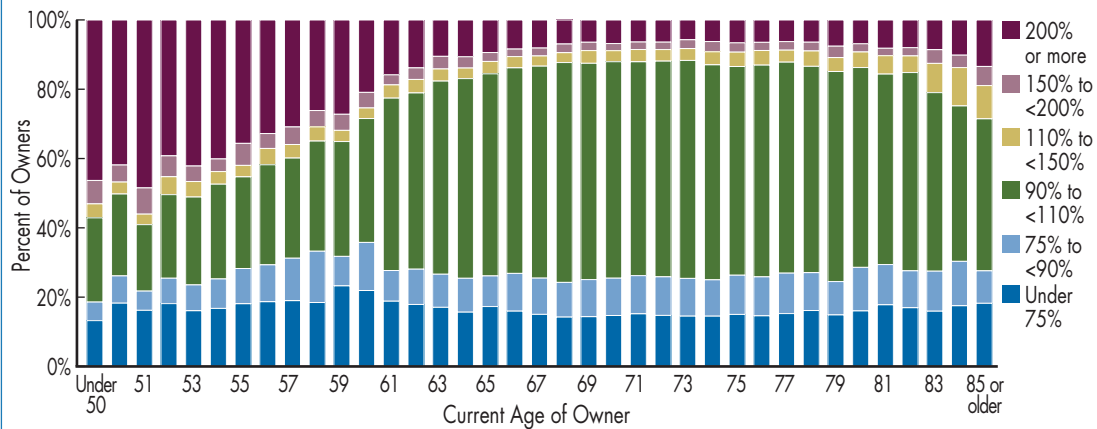
Note: Based on 28,484 Nonqualified IRA GMWB contracts issued before 2014 and remaining in force at EOY 2014 that had withdrawals.

Figure C3-1: GMB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Traditional IRA Only



Note: Based on 282,582 Traditional IRA GMB contracts issued before 2014 and remaining in force at EOY 2014 that had withdrawals in 2014.

Figure C3-2: GMB Withdrawals as a Percentage of Maximum Annual Benefit Amount by Age — Nonqualified Only



Note: Based on 101,401 Nonqualified GMB contracts issued before 2014 and remaining in force at EOY 2014 that had withdrawals in 2014.

Related Links

The following links are valid as of October 2016.

LIMRA

Variable Annuity Guaranteed Living Benefit Election Tracking Survey, Fourth Quarter 2014 (2015)

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/2015/Glimpse_Variable_Annuity_Guaranteed_Living_Benefit_\(GLB\)_Election_Tracking_Survey_\(2014,_4th_Quarter\).aspx?LangType=1033](http://www.limra.com/Research/Abstracts/2015/Glimpse_Variable_Annuity_Guaranteed_Living_Benefit_(GLB)_Election_Tracking_Survey_(2014,_4th_Quarter).aspx?LangType=1033)

Variable Annuity Guaranteed Living Benefits Utilization — 2013 Experience (2015)

Based on 2013 data for 21 companies.

[http://www.limra.com/Research/Abstracts/2016/Variable_Annuity_Guaranteed_Living_Benefits_Utilization_-_2013_Experience_\(2015\).aspx?LangType=1033](http://www.limra.com/Research/Abstracts/2016/Variable_Annuity_Guaranteed_Living_Benefits_Utilization_-_2013_Experience_(2015).aspx?LangType=1033)

Variable Annuity Guaranteed Living Benefits Utilization — 2012 Experience (2014)

Based on 2012 data for 22 companies.

[http://www.limra.com/Research/Abstracts/2014/Variable_Annuity_Guaranteed_Living_Benefits_Utilization_-_2012_Experience_\(2014\).aspx?LangType=1033](http://www.limra.com/Research/Abstracts/2014/Variable_Annuity_Guaranteed_Living_Benefits_Utilization_-_2012_Experience_(2014).aspx?LangType=1033)

Variable Annuity Guaranteed Living Benefits Utilization — 2011 Experience (2014)

Based on 2011 data for 19 companies.

[http://www.limra.com/Research/Abstracts/2014/Variable_Annuity_Guaranteed_Living_Benefits_Utilization_-_2011_Experience_\(2014\).aspx?](http://www.limra.com/Research/Abstracts/2014/Variable_Annuity_Guaranteed_Living_Benefits_Utilization_-_2011_Experience_(2014).aspx?)

Variable Annuity 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?

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?)

Related Links *(continued)*

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?LangType=1033](http://www.limra.com/Research/Abstracts/2008/Guaranteed_Living_Benefits_Utilization__2006_Data_(2008).aspx?LangType=1033)

Non-LIMRA

SOA Panel Discussion on Variable Annuity Policyholder Behavior, May 2015

This session presented results of a study that identified the general drivers of optimal policyholder behavior and provided a better understanding of the risks associated with policyholder behavior. The results of a joint SOA/LIMRA study of the utilization of guaranteed living benefits in variable annuities were also presented.

<https://www.soa.org/Professional-Development/Event-Calendar/2015/las/Agenda-Day-2.aspx>

Unpredictable policyholder behavior challenges U.S. life insurers' variable annuity business, Moody's Investors Service, June 2013

Unpredictable behavior by variable annuity policyholders will continue to pressure U.S. 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

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

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

“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.

<https://www.soa.org/library/newsletters/product-development-news/2009/june/pro-2009-iss-74-saip.pdf>



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