



The Next Generation of Income Guarantee Riders: Part 1 – The Deferral Phase

By Wade Pfau
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Clients no longer need to move their assets to a variable annuity with a rider to guarantee lifetime withdrawal benefits, thanks to the RetireOne stand-alone living benefit (SALB) rider from Aria Retirement Solutions, which can be applied to a portfolio of mutual funds and ETFs. Despite this enticing promise, however, the SALB may not offer as much downside protection as advisors and clients expect.

This is the first of a three-article series that will analyze the SALB. In this installment, I will focus on how the SALB works during the pre-retirement deferral phase.

Riders, such as the SALB, offer downside protection in the form of lifetime income, upside potential with step-ups based on the underlying portfolio performance, and minimal surrender penalties. Bob Veres recently wrote about RetireOne at *Inside Information*, examining fundamental questions about what these guarantees are designed to insure against and what role can they play in a retirement portfolio ([link](#), requires subscription).

The RetireOne rider is backed by Transamerica, which also backs the relatively low-cost guaranteed lifetime withdrawal benefit (GLWB) rider available for Vanguard's variable annuities.

In order to illustrate the most important lessons about RetireOne and comparable riders as they concern pre-retirement deferral, I simulated RetireOne's hypothetical performance using historical data and compared it to comparable simulations for both unguaranteed mutual funds and a VA/GLWB. We'll see some of those results, but first, let's examine in a little more detail how exactly these products work.

General characteristics of both guarantee riders

Guarantee riders, which until recently were only available for deferred variable annuities, have become popular a retirement income tool. In contrast to single-premium immediate annuities (SPIAs), which provide lifetime income that is fixed in either nominal or inflation-adjusted terms, guarantee riders are designed to provide their purchasers with downside protection, upside potential, and the opportunity to have remaining assets returned.

These riders do so by guaranteeing an income for life at a fixed withdrawal percentage of the benefit base. The benefit base is the hypothetical amount used to calculate the guaranteed withdrawals and rider fees; it initially equals the contracted assets, but it may be more than the contract value of remaining assets later on. As long as the client does



not take out more than the guaranteed withdrawal amounts, guaranteed withdrawals never decrease (in nominal terms), even if the account balance falls to zero. In this regard, GLWBs are similar to SPIAs, though a GLWB contract can be terminated, with remaining assets returned. Additionally, if the contract value of the underlying account increases sufficiently after accounting for any withdrawals and fees, a step-up feature may kick in to provide permanently higher guaranteed withdrawals.

The SALB guarantee riders offer only nominal protections (as opposed to the inflation-adjusted or “real” guarantees). This is one basic drawback – though the monetary value of the benefit base is guaranteed not to shrink, inflation will indeed chip away dramatically at its real purchasing power. [I explored](#) the real vs. nominal guarantee issue last year in an article discussing the income phase of a GLWB rider for a variable annuity.

Both SALB and VA/GLWB owners, meanwhile, are exposed to the credit risk of their insurers, since the rider guarantees may not be protected by state guarantee associations. Vanguard works with two insurers to provide the guarantee rider, one of which is Transamerica, the same company that backs Aria’s RetireOne guarantee.

Table 1, below, summarizes the key features for each rider.

**Table 1
Contrasting the Features**

	Vanguard's VA/GLWB	RetireOne's SALB
Maximum Allocation to Stocks	70%	80%
Underlying Annual Account Fee	0.59%	Varies by investment choice. Low-cost index funds are available. Assumption used here: 0.2%
Annual Rider Fee	0.95%	Relates to Percentage of Assets Held Outside the Fixed Core Category: 0 - 50%: 1% 50.1 - 60%: 1.15% 60.1 - 70%: 1.35% 70.1 - 80%: 1.75%
Rider Applies To	High-Watermark Benefit Base	Remaining Contract Value of Assets



Guaranteed Payout Rate for Singles	Depends on Age of First Withdrawal 59 - 64: 4.5% 65-69: 5% 70-79: 5.5% 80+: 6.5%	Depends on Age of First Withdrawal and Current 10-Year Treasury Yield with an Age-Varying Floor and Ceiling A Few Examples: 60: 4 - 5.5% 65: 4 - 6% 70: 4.5 - 6.5% 80: 5.5 - 7.5% Notes: Between floor and ceiling payout rates are rounded down and when interest rates increase, the remaining account value rather than benefit base is used to assess the possibility for a step up
Payout Rate Reduction for a Couple's Joint Guarantee	Reduce Payout by 0.5%	Reduce Payout by 0.5%
Tax Treatment	Variable annuity deferred taxation, treated as income	Typical tax treatment for mutual funds in taxable or tax deferred accounts

Differences between Vanguard's GLWB and Aria's RetireOne

In 2011, Vanguard made headlines by [offering](#) a GLWB rider that costs less than nearly all of its competitors. It has an annual fee of 0.95% of the total benefit base, on top of the 0.59% fees on the underlying assets held in the Vanguard variable annuity. Owners are allowed to choose among three variable-annuity asset allocations, which range from 40% to 70% stocks. Income may be deferred, but by purchasing the rider before income begins the user will protect the interim high-watermark for the total benefit base used to calculate the subsequent income guarantee.

The guaranteed payout rate is expressed as a percentage of the benefit base, and that rate depends on the age at which guaranteed withdrawals start. These payouts are shown in table 1, below; note, however, that for couples (joint lives) the payout rate is 0.5% less than what the table shows. Step-ups in guaranteed income take effect, on the yearly anniversaries of the policy, whenever the contract value of the remaining assets exceeds the past high watermark. (Though it should be noted that this is increasingly unlikely to happen in the years after retirement, as portfolio returns would need to be large enough to surpass both fees and income withdrawals to reach those new heights.)

The [RetireOne](#) guarantee, meanwhile, differs from the VA/GLWB in several important ways. First, of course, is the fact that an investor does not have to move his or her assets to a variable annuity in order to acquire the rider. The guarantee can be used with any portfolio that meets certain asset allocation criteria and draws from an [approved list](#) of



mutual funds or ETFs from a variety of leading companies (a full prospectus can be found [here](#)). The underlying funds will each have their own fees.

One very important difference from most VA/GLWBs is RetireOne's rider fees, which are charged on the remaining contract value of the assets, rather than the high-watermark total benefit base. When the value of remaining assets is significantly reduced, this method of calculation can mean substantial savings for owners. The cost of the rider depends on the asset allocation, with values between 1% and 1.75%.

RetireOne also allows for a stock allocation of up to 80%.

Another important difference is the way RetireOne's guaranteed payout rate is calculated: It depends both on the age at which benefits begin and on the current yield on 10-year Treasury bonds. For a 65-year old single person who wishes to begin his or her guaranteed withdrawals, the payout rate is 4% if the Treasury yield is less than 4.5%, but it increases to 6% if the Treasury yield exceeds 7%.

After the guaranteed income begins, the benefit base no longer determines the withdrawal amount. Step-ups in withdrawals occur if the revised payout rate based on new Treasury yields multiplied by the remaining account balance exceeds the previous guaranteed withdrawal. Though this can be a difficult hurdle to pass after income-drawdown begins, rising Treasury yields do offer greater hope for a benefit increase, and benefits do not decrease after yields fall.

A final important issue to consider is taxes, even though the complications of individual clients' cases make it difficult to generalize about outcomes. A VA/GLWB defers taxation, though all gains and income are taxed at the marginal income tax rates, while the SALB is generally taxed like a mutual fund. Joseph Tomlinson recently provided a [deeper analysis](#) of the tax concerns when comparing annuities and systematic withdrawals.

Data and modeling approach, and a caution

To simulate performance of these different approaches, I used Ibbotson Associates' *Stocks, Bonds, Bills, and Inflation* (SBBi) data on total returns for U.S. financial markets since 1926. I used the U.S. S&P 500 index to represent the stock market and the intermediate-term U.S. government bond index to represent the bond market. In all cases, returns were calculated on an annual basis, with withdrawals taken at the beginning of each year, fees taken at the end of each year, and annual rebalancing.

Simulations for a 10-year deferral period based on this historical data show how well these guarantees would have protected the benefit base in past markets, specifically examining rolling 10-year periods for retirement dates between 1936 and 2011. A complete collection of outcomes can be found in table 2, an appendix to this article.



Consider an investment of \$100, made by a couple when both spouses are 55. The simulation shows the portfolio wealth and benefit base, in real terms, that this couple enjoys 10 years later, when both are 65 and preparing to retire. Though their initial wealth is \$100, the benefit base can be less than \$100, since it is expressed in real terms, while the guarantee is nominal. (Though analyzing the guaranteed income phase will be left for part 2 in this series, the guaranteed payout rates for the couple, given their decision to retire at 65, for both the VA/GLWB and RetireOne SALB are also shown in table 2.)

For the mutual funds, I assumed an annual expense ratio of 0.2% of remaining assets. For the VA/GLWB and SALB, assumptions are mostly based on the Vanguard and Aria offerings, except that I assumed an annual step-up feature for each, rather than their actual, quarterly step-up. Though this simplification could cause the benefit base to occasionally fall lower than otherwise might be possible, such differences will be consistent for the purposes of comparing the two products.

For SALB, the rider amount is calculated as a percentage of remaining assets; it is 1% for the 40/60 allocation, 1.35% for the 70/30 allocation, and 1.75% for the 80/20 allocation.

A note on historical simulations such as this one: It is important to realize that the history of the U.S. financial markets has been [very kind](#) to retirees. A new, previously unrealized worst-case scenario could well await those for whom retirement lies in the uncertain future, and – again – these guarantees depend on the insurance company's ability to pay, which could be at risk if the overall financial landscape gets bleaker.

Another caveat to consider is that the terms of the VA/GLWB and SALB were set under current market conditions; if these products had existed in the past, they may have offered different terms than at present.

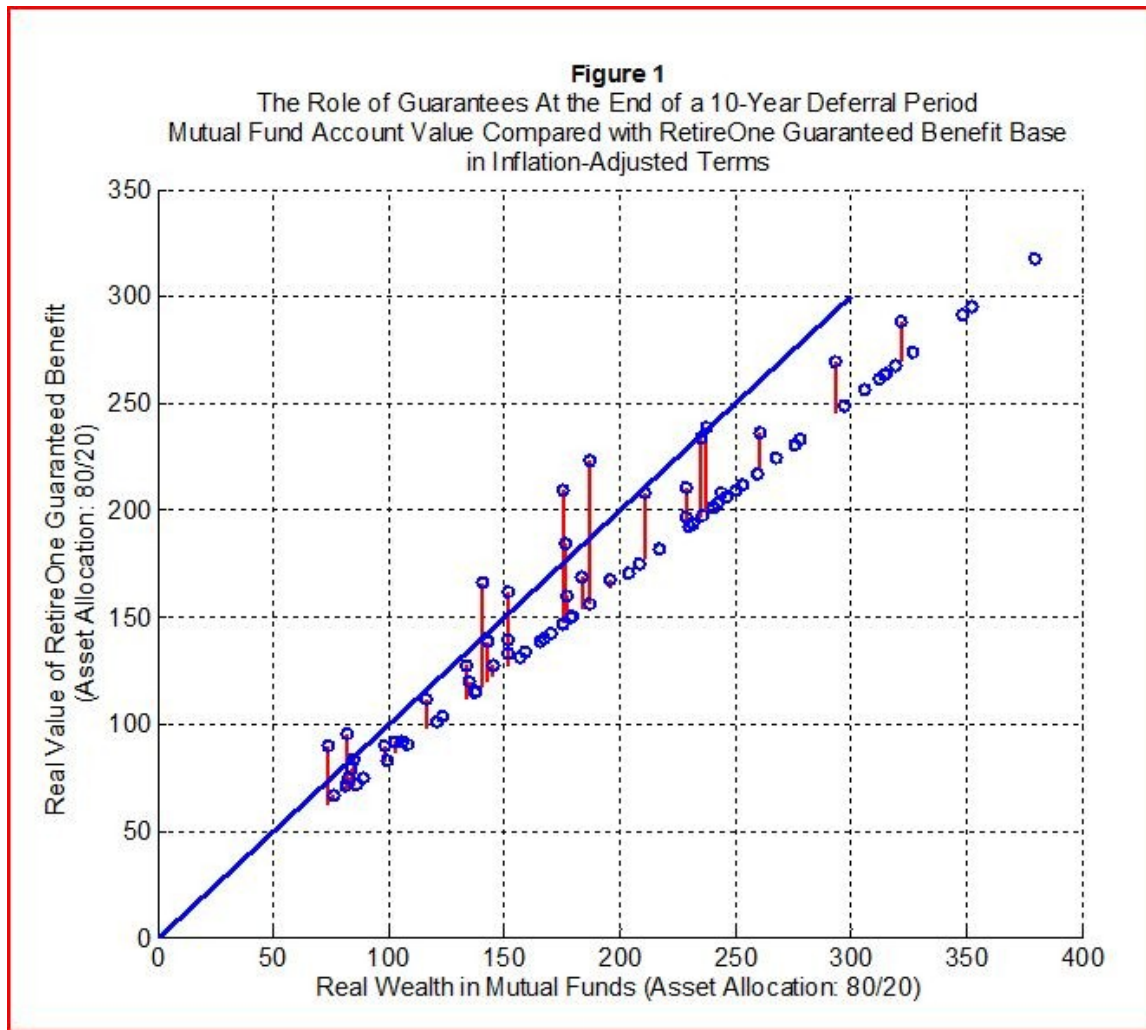
Comparing unguaranteed and guaranteed mutual funds

For the deferral period, on which we focus today, comparing the VA/GLWB to RetireOne would not be a meaningful exercise, so I'll dispense with that aspect of the analysis quickly. The small differences between the two products seen in table 2 are attributable only to their differing fees, which mean that RetireOne can gain a slight edge in scenarios that cause the account value to trail the benefit base. The differences between these products will be more evident in the next article, which will focus on the income phase.

Rather, what is interesting now is to compare the role of a guarantee in supporting a benefit base and reducing risk for prospective retirees at a time of life when wealth accumulations may be the largest, but when they are also most sensitive to losses. This returns us to the fundamental question asked by Bob Veres: What are guarantees designed to insure against?

To study the role of the guarantee, we have to find suitable comparison groups. What asset allocation would a client use for an unguaranteed portfolio, and what would they choose for a guaranteed portfolio?

Figure 1, below, compares the performance of a mutual fund account, with 80% stocks and 20% bonds, against the performance of the RetireOne guaranteed benefit base with the same 80/20 asset allocation. (Admittedly, this may be an unlikely case, since it implies a rather aggressive allocation for the unguaranteed portfolio.)



Points above the 45-degree line indicate better performance with RetireOne, while points below the line favor the unguaranteed mutual funds. Vertical red lines show cases where RetireOne users' account value would differ from the benefit base, and the line reaches down to the real value of remaining assets in those cases. These points show the outcomes for all the rolling historical periods.

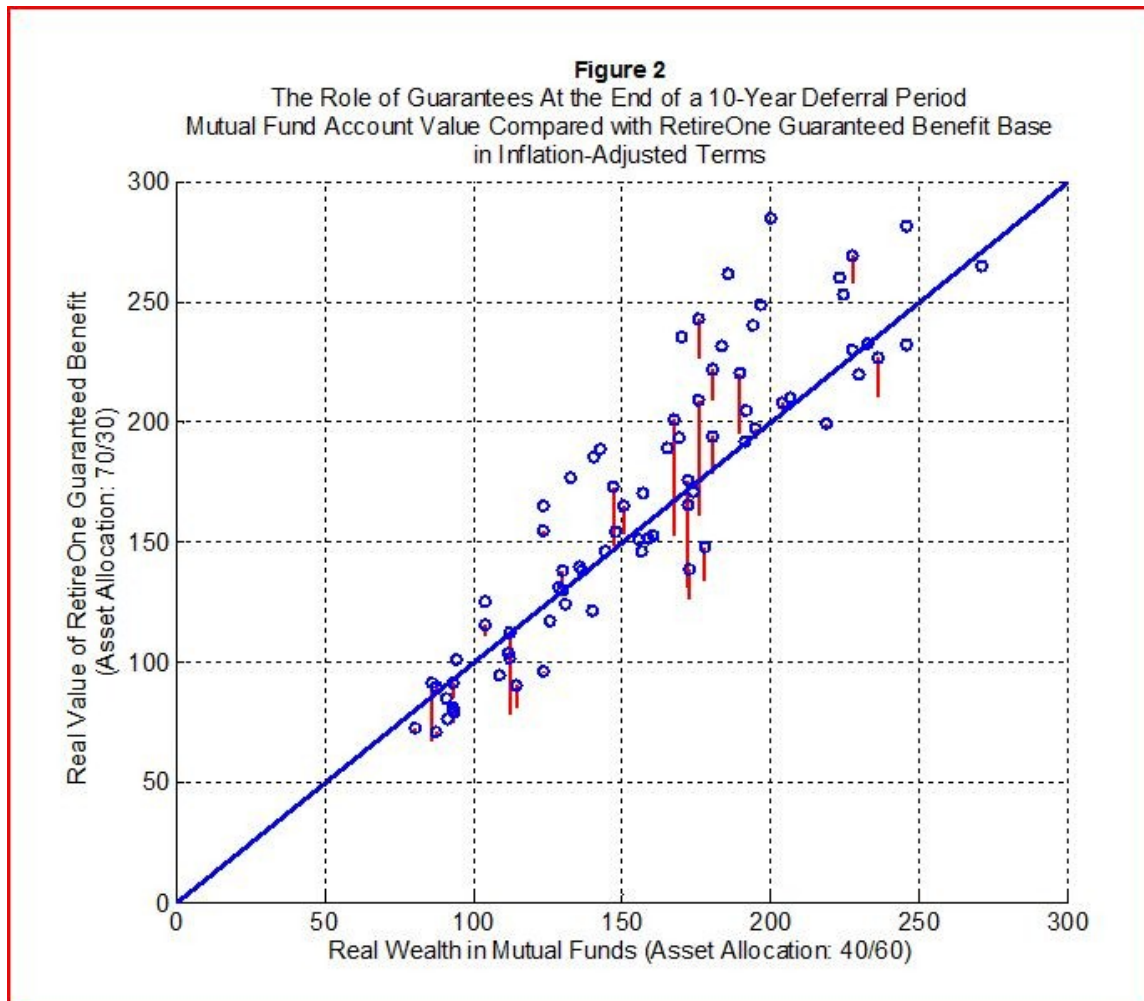


As expected, in most cases the unguaranteed portfolio provided more wealth, given the lack of rider fees. Occasionally, however, a drop in the markets shortly before retirement did cause the guaranteed benefit base to be higher. For instance, for a deferral period ending at the start of 2009, the mutual funds provided real wealth of \$82, while RetireOne supported a real benefit base of \$96 and a contract value for remaining assets of \$69. The \$13 difference between \$82 and \$69 represents the cumulative impact of the rider fee. But hypothetical SALB owners might have appreciated their decision, especially if it helped them to stay the course and maintain high stock allocations going into 2009. (As a point of comparison, in nominal terms the mutual fund portfolio was \$105, the RetireOne benefit base was \$123, and the contract value of RetireOne was \$88.)

If these were the asset allocation choices, would it be worth the expense to add the guarantee rider? There's no clear answer, and it depends in large part on client preferences, but one important point to consider is that the downside protection is only relative. We could consider a decline in real wealth after 10 years to be a rather bad outcome, but the rider does not protect well against that outcome, as the real value of protected wealth does occasionally fall below the initial \$100 at age 55.

Historically, there has never been a case in which the unguaranteed value of the mutual funds fell below \$100, while the rider maintained a real benefit base above \$100. And most of the bad-luck cases still favored the unguaranteed approach. Nonetheless, the rider was quite helpful in a minority of scenarios (the benefit base was larger than the mutual fund assets in eight of the 76 rolling historical periods), such as the aforementioned 2009 retiree, or a 1975 retiree, whose unguaranteed wealth would have dropped to the lowest level observed historically (\$74). The rider would have supported a benefit base of \$90 and a contract value of \$62.

Next, consider figure 2, which may feature a more realistic example – a more conservative client, who chooses a 40/60 allocation for unguaranteed mutual funds, but who is persuaded to use a more aggressive 70/30 allocation with the RetireOne guarantee. This is a very interesting case to examine, showing how RetireOne supports greater upside while providing less impressive performance on the downside. When real wealth is less than \$100, the guaranteed benefit base is slightly greater than the unguaranteed mutual fund balance in a few cases, but, generally, the more conservative asset allocation from the unguaranteed funds supports greater wealth. Based on these historical simulations, it would be difficult to justify paying the rider fees and making the asset allocation more aggressive for clients who worry more about downside protection than upside potential.



The bottom line

Unfortunately, I cannot draw any categorical conclusions for you; individual clients' views and concerns need to be a part of deciding whether to apply RetireOne to an investment portfolio. Nonetheless, table 2 and the figures in this article illustrate the role of a rider during the deferral phase – the surprise is that riders do not typically support a higher benefit base to protect from downside risk in the historical simulations.

Clients seeking to protect against a sequence of bad returns just before retirement will find that the guarantee still leaves them worse off in inflation-adjusted terms, especially as the rider fees hamper the ability of the contracted assets to grow faster than the unguaranteed alternative.

There is much to consider when deciding whether to use RetireOne during a deferral period. In part 2, I will provide further comparisons between the VA/GLWB and RetireOne to see how they stack up in the post-retirement income phase.



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Table 2

Comparing Unguaranteed Mutual Funds, Variable Annuities with a GLWB Rider, and RetireOne Guarantee for Mutual Funds Over a 10-Year Deferral Period (At Age 55, a Same-Age Couple Invests \$100 of Assets and Defers Taking Withdrawals Until Age 65) Real Account Contract Value and Guaranteed Benefit Base Value at the End of the 10-Year Deferral Period in Inflation-Adjusted Terms

Year Reaching Age 65	Mutual Funds			Deferred Variable Annuity with Guaranteed Living Benefit Rider					RetireOne Stand Alone Living Benefit Rider						
	80/20 Asset Alloc. Real Wealth	70/30 Asset Alloc. Real Wealth	40/60 Asset Alloc. Real Wealth	Benefit Rate Guar.	70/30 Asset Allocation Real Wealth		40/60 Asset Allocation Real Wealth		Benefit Rate Guar.	80/20 Asset Allocation Real Wealth		70/30 Asset Allocation Real Wealth		40/60 Asset Allocation Real Wealth	
					Benefit Base	Benefit Base	Real Wealth	Benefit Base		Real Wealth	Benefit Base	Real Wealth	Benefit Base	Real Wealth	Benefit Base
1936	238	241	236	4.5	205	228	205	205	3.5	199	239	210	227	213	213
1937	268	266	246	4.5	226	226	214	214	3.5	224	224	232	232	222	222
1938	140	150	172	4.5	127	171	149	175	3.5	118	166	131	176	156	182
1939	134	145	173	4.5	123	135	150	153	3.5	112	128	126	139	156	159
1940	143	154	178	4.5	131	145	155	157	3.5	120	139	134	148	161	161
1941	152	159	172	4.5	137	165	151	158	3.5	127	162	139	165	156	161
1942	175	175	167	4.5	152	202	147	164	3.5	147	210	153	201	151	166
1943	176	170	147	4.5	148	174	129	134	3.5	148	184	149	173	133	135
1944	145	143	131	4.5	124	124	115	115	3.5	122	128	124	124	118	118
1945	167	160	136	4.5	139	139	119	119	3.5	140	140	140	140	123	123
1946	157	150	129	4.5	130	130	113	113	3.5	131	131	131	131	117	117
1947	98	98	93	4.5	85	91	81	85	3.5	82	90	85	92	84	88
1948	135	127	104	4.5	111	116	91	94	3.5	113	120	111	116	94	96
1949	106	101	88	4.5	89	90	77	78	3.5	89	92	89	90	79	80
1950	123	116	94	4.5	101	101	83	83	3.5	103	103	101	101	85	85
1951	159	144	104	4.5	127	127	91	91	3.5	133	133	126	126	94	94



ADVISOR PERSPECTIVES

1952	217	189	124	4.5	167	167	109	109	3.5	182	182	165	165	112	112
1953	232	203	133	4.5	178	178	117	117	3.5	194	194	177	177	120	120
1954	196	175	124	4.5	154	156	108	108	3.5	164	167	153	155	112	112
1955	246	216	143	4.5	190	190	125	125	3.5	206	206	189	189	129	129
1956	242	213	141	4.5	188	188	124	124	3.5	203	203	186	186	127	127
1957	312	270	170	4.5	238	238	150	150	3.5	262	262	235	235	154	154
1958	293	259	176	4.5	229	245	154	156	3.5	246	270	226	243	159	160
1959	380	326	200	4.5	288	288	176	176	3.5	318	318	285	285	181	181
1960	348	300	186	4.5	264	264	163	163	4.0	292	292	262	262	168	168
1961	297	265	184	4.5	234	234	161	161	3.5	249	249	231	231	166	166
1962	319	285	197	4.5	251	251	173	173	3.5	267	267	249	249	178	178
1963	260	239	181	4.5	211	224	159	162	3.5	218	236	209	222	163	166
1964	306	275	194	4.5	242	242	170	170	3.5	256	256	240	240	175	175
1965	241	222	170	4.5	195	195	149	149	3.5	202	202	193	193	153	153
1966	209	195	157	4.5	172	172	138	138	4.0	175	175	170	170	142	142
1967	183	175	151	4.5	154	166	132	136	4.0	154	169	153	165	136	140
1968	235	217	166	4.5	190	190	145	145	5.0	197	197	189	189	150	150
1969	187	177	148	4.5	155	155	130	130	5.0	156	156	154	154	134	134
1970	152	147	130	4.5	129	139	114	121	5.5	127	139	128	138	118	124
1971	152	146	130	4.5	128	131	114	114	5.0	127	133	128	130	118	118
1972	137	135	126	4.5	118	118	110	110	5.0	115	115	117	117	114	114
1973	166	158	137	4.5	139	139	120	120	5.0	139	139	138	138	124	124
1974	116	116	112	4.5	101	113	98	103	5.0	98	112	101	113	102	106
1975	74	77	86	4.5	67	92	76	87	5.5	62	90	67	91	78	89
1976	84	86	93	4.5	75	81	81	81	5.5	70	79	75	81	84	84
1977	108	109	109	4.5	95	95	95	95	5.0	90	90	95	95	99	99
1978	83	86	93	4.5	74	79	82	85	5.5	69	75	75	79	85	87
1979	77	80	88	4.5	69	71	77	77	5.5	64	67	69	71	79	79



Table 2 (Continued)

Year Reaching Age 65	80/20	70/30	40/60	Benefit Rate Guar.	70/30		40/60		Benefit Rate Guar.	80/20		70/30		40/60	
	Asset Alloc. Real Wealth	Asset Alloc. Real Wealth	Asset Alloc. Real Wealth		Asset Allocation Real Wealth	Benefit Base	Asset Allocation Real Wealth	Benefit Base		Asset Allocation Real Wealth	Benefit Base	Asset Allocation Real Wealth	Benefit Base	Asset Allocation Real Wealth	Benefit Base
1980	89	91	94	4.5	79	79	82	82	5.5	75	75	79	79	85	85
1981	99	98	91	4.5	85	85	80	80	5.5	83	83	85	85	82	82
1982	82	82	81	4.5	71	73	71	71	5.5	68	71	71	73	73	73
1983	86	88	91	4.5	77	77	80	80	5.5	72	72	77	77	83	83
1984	121	119	112	4.5	105	105	99	99	5.5	101	101	104	104	101	101
1985	176	168	145	4.5	148	148	127	127	5.5	147	147	146	146	131	131
1986	179	173	156	4.5	153	153	137	137	5.5	150	150	151	151	141	141
1987	180	175	161	4.5	154	154	142	142	5.5	150	150	153	153	145	145
1988	204	196	174	4.5	173	173	154	154	5.5	171	171	171	171	157	157
1989	230	220	192	4.5	194	194	169	169	5.5	193	193	192	192	173	173
1990	275	263	228	4.5	232	232	201	201	5.5	231	231	230	230	206	206
1991	229	227	219	4.5	200	202	193	193	5.5	192	197	198	200	198	198
1992	315	304	271	4.5	268	268	239	239	5.0	264	264	265	265	245	245
1993	278	267	233	4.5	235	235	206	206	5.0	233	233	233	233	211	211
1994	259	252	230	4.5	222	222	203	203	5.0	217	217	220	220	208	208
1995	244	233	204	4.5	206	210	180	188	5.5	204	208	204	208	185	192
1996	253	241	207	4.5	212	212	182	182	5.0	212	212	210	210	187	187
1997	250	234	192	4.5	207	207	169	169	5.0	209	209	205	205	174	174
1998	314	290	225	4.5	256	256	198	198	5.0	263	263	253	253	203	203
1999	352	323	246	4.5	285	285	217	217	4.0	295	295	282	282	222	222
2000	327	298	223	4.5	263	263	197	197	5.0	274	274	260	260	202	202
2001	321	296	228	4.5	261	272	200	200	4.5	269	288	258	269	206	206
2002	235	224	190	4.5	197	222	167	170	4.5	197	234	195	220	172	174



2003	187	185	176	4.5	162	211	154	161	3.5	156	223	161	209	159	165
2004	211	204	181	4.5	179	196	159	159	3.5	177	208	178	194	163	163
2005	229	221	195	4.5	194	199	171	171	3.5	192	211	193	197	176	176
2006	177	174	159	4.5	152	152	139	139	3.5	149	160	152	152	144	144
2007	170	168	157	4.5	146	146	138	138	4.0	143	143	146	146	142	142
2008	138	139	140	4.5	121	121	123	123	3.5	116	116	121	121	127	127
2009	82	90	113	4.5	78	102	99	108	3.5	69	96	78	102	102	111
2010	85	92	114	4.5	80	90	100	102	3.5	71	84	81	90	103	104
2011	103	109	124	4.5	95	96	108	108	3.5	86	91	95	96	112	112

Notes: Data for stocks, bonds, and inflation is from *Stocks, Bonds, Bills, and Inflation* provided by Morningstar and Ibbotson Associates, in which the U.S. S&P 500 index represents the stock market and intermediate-term U.S. government bonds represent the bond market. Annual data is used, with annual rebalancing to the fixed asset allocation. Starting wealth at age 55 is \$100. Amounts are expressed in real terms with a base year for when the couple turned age 55. Amounts are shown at the couple's 65 birthday (both members are assumed to be born on January 1st). The couple invests \$100 on their 55th birthday and defers taking their first retirement withdrawal until their 65th birthday. Mutual funds have an annual expense ratio of 0.2% of remaining assets. The VA/GLWB is modelled after Vanguard's offering, with specifications including a joint withdrawal payout rate of 4.5% for the 65-year old couple, variable annuity fees of 0.59% of remaining assets, a guarantee rider of 0.95% of the benefit base, and an annual step-up feature. For the RetireOne product, the underlying mutual funds are assumed to have an annual fee of 0.2% of remaining assets. The rider amount is also calculated as a percentage of remaining assets and is 1% for the 40/60 allocation, 1.35% for the 70/30 allocation, and 1.75% for the 80/20 allocation. It also has an annual step-up feature. Note that during the deferral period, both the VA/GLWB and RetireOne offer quarterly step-ups, which could result in a higher benefit base than shown here in some instances. The RetireOne payout rate is connected to the yield for a 10-year Treasury Bond from the last business day before January 1 (data is from Global Financial Data), with a floor of 3.5% and a ceiling of 5.5% whenever the Treasury yield is outside of those bounds.

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