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How Benefits Impact Asset Allocation in Variable Annuities

By Jim Otar, CMT, CFP
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Bonuses and step-ups play a role in how you allocate assets between equities and fixed income in a variable annuity. Managed correctly, the variable annuity could outperform a similar investment portfolio.

Variable annuities with guaranteed withdrawal benefits for life (VAGWs) offer a number of features and benefits that can reduce the risks to lifelong income from retirement portfolios. Resets and bonuses, in particular, can provide a higher retirement income lasting over a lifetime and influence how you structure the client's portfolio.

Let's review how these features work.

Resets and bonuses

A step-up reset will come into play when the portfolio does well. If the contract value exceeds the guaranteed withdrawal benefit, then the base is reset higher, equal to the contract value. Most contracts allow for annual resets. Some companies allow resets for 30 years from the initial contract date. Others allow resets until age 80.

Bonuses, on other hand, increase guaranteed income when withdrawals start. For example, if you sell a \$100,000 VAGW to a 55-year-old client and he is planning to start withdrawing at age 65, his guaranteed withdrawal base (GWB) is increased to \$150,000 by age 65, even if the investments stay flat or go down.

Most insurance companies pay a 5% bonus, although some offer higher. If there is a reset that increases the GWB by more than the bonus amount in a given year, no bonus is added. There is usually a time limit on bonus accumulation—10 years is common—and there are restrictions on when a bonus will be added. Bonuses are added when:

- There are no withdrawals during the year
- There is no step-up reset during the year exceeding 5%

Thus, the insurance company guarantees a minimum increase of 5% as long as you are not withdrawing funds. Many clients (and advisors) get confused about the bonus thinking they can cash it out at will. They can't. The bonus is added to the GWB and not to the contract balance. In other words, the bonus cannot be cashed out, but it increases the guaranteed annual income for the remainder of the guarantee term.

The bonus feature allows you to be more aggressive with the retiree's portfolio. An

aggressive portfolio will provide two benefits: If markets do well, you'll end up with more step-up resets and higher future income. If markets don't do well, you still have the 5% bonus.

Here's the important issue. Your client has 10 years before retirement and two choices: (a) invest in a portfolio of mutual funds, or (b) buy a VAGW contract and benefit from the bonus. Which would pay more money at the end of 10 years?

Investment vs. the VAGW portfolio

Steve is 55. His investment portfolio, worth \$100,000, is invested in mutual funds. His asset mix is 60% equities and 40% fixed income. He wants his portfolio to grow until he is 65. To keep it simple, we assume that he does not add to or withdraw any money from this portfolio until he is 65.

Jane is also 55. She has \$100,000. Unlike Steve, she buys a VAGW contract. Her asset mix is 80% equities and 20% fixed income. She also wants her portfolio to grow until she is 65. And she does not add to or withdraw any money from this portfolio until she is 65.

For each retirement year since 1900, we've calculated the value of the investment portfolio and the value of the guaranteed withdrawal base of the VAGW after 10 years. The table indicates the results.

Starting year	Steve's portfolio ¹	Jane's guaranteed withdrawal base ²	Percent benefit of bonus of the VAGW
1900	\$178,978	\$184,801	3%
1901	\$154,297	\$169,523	10%
1902	\$141,498	\$156,936	11%
1903	\$139,549	\$156,865	12%
1904	\$149,904	\$193,965	29%
1905	\$121,973	\$165,444	36%
1906	\$128,464	\$150,000	17%
1907	\$130,821	\$150,000	15%
1908	\$133,091	\$193,596	45%
1909	\$118,070	\$158,538	34%
1910	\$120,156	\$150,000	25%
1911	\$112,002	\$150,000	34%
1912	\$116,091	\$150,000	29%
1913	\$129,299	\$150,000	16%
1914	\$136,121	\$154,746	14%
1915	\$162,134	\$174,168	7%
1916	\$157,953	\$150,000	-5%
1917	\$161,285	\$150,000	-7%

1918	\$222,903	\$220,832	-1%
1919	\$262,884	\$274,213	4%
1920	\$228,514	\$260,189	14%
1921	\$215,041	\$318,893	48%
1922	\$148,981	\$322,970	117%
1923	\$120,102	\$285,482	138%
1924	\$153,254	\$297,487	94%
1925	\$125,713	\$265,972	112%
1926	\$143,578	\$238,051	66%
1927	\$159,371	\$234,668	47%
1928	\$104,883	\$194,270	85%
1929	\$88,193	\$150,000	70%
1930	\$92,280	\$150,000	63%
1931	\$98,287	\$150,000	53%
1932	\$124,274	\$234,300	89%
1933	\$144,897	\$274,995	90%
1934	\$124,232	\$205,714	66%
1935	\$144,766	\$236,809	64%
1936	\$135,786	\$176,925	30%
1937	\$105,679	\$150,000	42%
1938	\$132,254	\$156,880	19%
1939	\$127,346	\$150,000	18%
1940	\$136,523	\$162,773	19%
1941	\$172,964	\$191,957	11%
1942	\$207,518	\$228,359	10%
1943	\$202,856	\$215,496	6%
1944	\$182,140	\$199,020	9%
1945	\$206,464	\$220,773	7%
1946	\$197,393	\$207,802	5%
1947	\$223,459	\$250,000	12%
1948	\$217,173	\$267,787	23%
1949	\$257,815	\$289,362	12%
1950	\$250,881	\$281,760	12%
1951	\$220,432	\$245,194	11%
1952	\$232,110	\$248,238	7%
1953	\$206,064	\$244,376	19%
1954	\$234,524	\$261,462	11%
1955	\$206,036	\$209,424	2%
1956	\$192,095	\$189,332	-1%
1957	\$174,918	\$193,834	11%

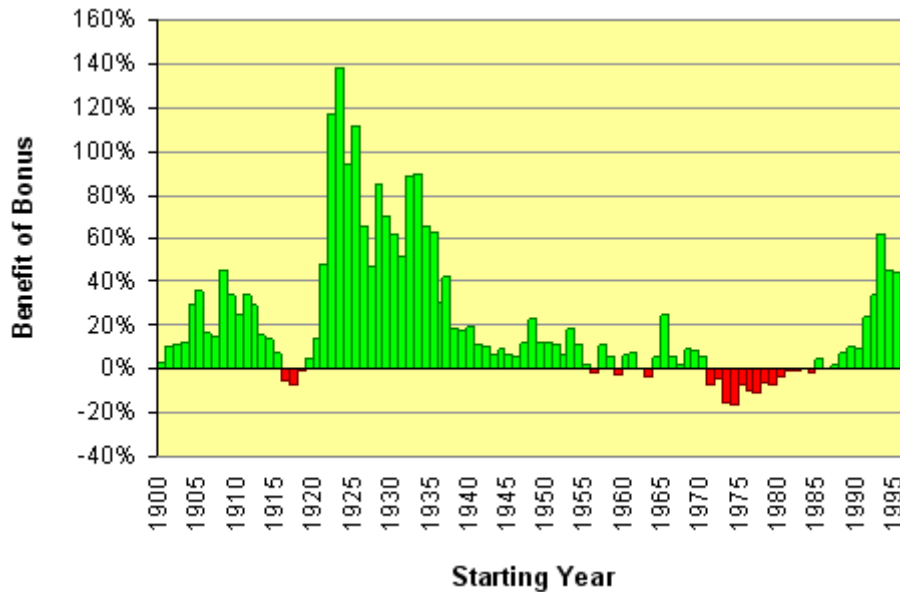
1958	\$207,931	\$218,861	5%
1959	\$182,357	\$178,314	-2%
1960	\$168,314	\$179,230	6%
1961	\$172,187	\$185,647	8%
1962	\$162,791	\$162,677	0%
1963	\$192,133	\$185,988	-3%
1964	\$158,229	\$167,120	6%
1965	\$125,128	\$156,225	25%
1966	\$142,377	\$150,000	5%
1967	\$171,579	\$174,880	2%
1968	\$142,370	\$155,095	9%
1969	\$138,190	\$150,000	9%
1970	\$159,999	\$169,380	6%
1971	\$185,767	\$173,057	-7%
1972	\$171,494	\$163,894	-4%
1973	\$177,960	\$150,000	-16%
1974	\$218,724	\$183,331	-16%
1975	\$265,290	\$246,692	-7%
1976	\$259,277	\$234,292	-10%
1977	\$255,192	\$227,629	-11%
1978	\$278,002	\$261,344	-6%
1979	\$298,288	\$277,960	-7%
1980	\$318,334	\$306,830	-4%
1981	\$265,759	\$263,012	-1%
1982	\$310,005	\$307,227	-1%
1983	\$281,698	\$282,158	0%
1984	\$260,042	\$256,518	-1%
1985	\$250,665	\$261,645	4%
1986	\$258,156	\$259,225	0%
1987	\$263,642	\$268,758	2%
1988	\$307,357	\$329,100	7%
1989	\$327,827	\$361,447	10%
1990	\$311,276	\$341,196	10%
1991	\$300,618	\$373,235	24%
1992	\$238,776	\$320,952	34%
1993	\$198,835	\$322,873	62%
1994	\$218,681	\$318,141	45%
1995	\$230,503	\$333,529	45%
1996	\$193,921	\$270,814	40%

Notes: ¹Asset mix is 60% S&P 500 index, 40% fixed income. Equity: alpha 2%,

expenses 1.5%. Fixed income: net yield six-month CD interest rate plus 0.5%.
²Asset mix is 80% S&P 500 index, 20% fixed income. Equity: alpha 2%, expenses 2%. Fixed income: net yield six-month CD interest rate plus 0.5%. The annual GMWB rider cost is 0.5% of the contract value. Annual resets, bonus 5%.
 Source: Otar & Associates

Figure 1 depicts the benefit of the bonus. The green bars indicate the benefit of the bonus, and the red bars indicate the disadvantage of the bonus when compared with the investment portfolio.

Figure 1: Benefits of VA Bonus



Source: Otar & Associates

Overall, Jane would have done significantly better than Steve. The bonus feature—combined with the annual step-up reset benefit—creates a higher lifelong income.

Asset allocation in VAGWs

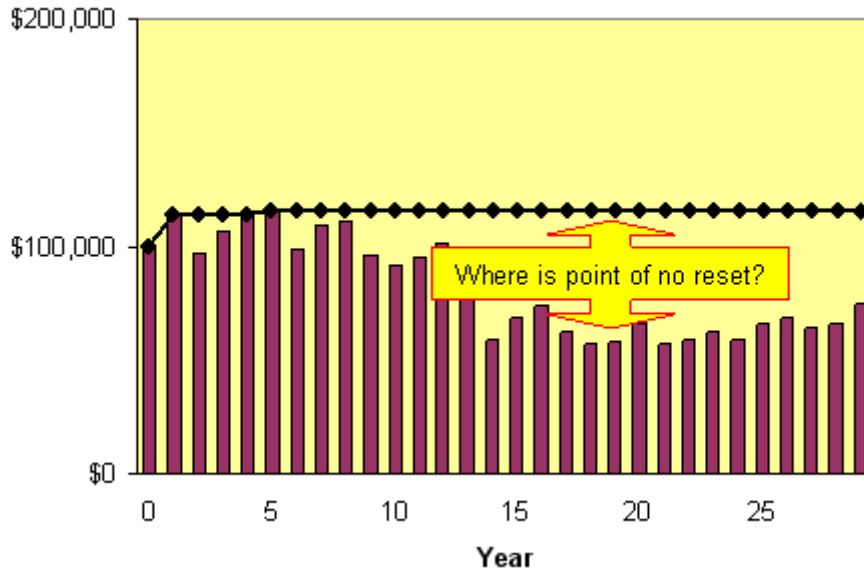
The asset allocation in variable annuities is not as straightforward as for your plain-vanilla investment portfolios. By purchasing a VAGW, you remove market and longevity risks. The only remaining risk factors are inflation and the financial strength of the insurance company.

To mitigate inflation risk, you need step-up resets as often as possible (and as large as possible). Therefore, you need to hold the highest allowable percentage of equities in the portfolio. Most companies allow you to hold up to 80% equities. However, that's not an allocation you should hang on to for the rest of your client's life.

In Figure 2, we see a chart showing the contract balance (the vertical bars) and guaranteed withdrawal base (the black line). After some time, the contract value goes down well below the guaranteed withdrawal base. There comes a point when there is no chance of markets rising enough to exceed the guaranteed withdrawal base and trigger a new step-up reset.

Once the hope of step-up resets diminishes, your purpose should be to preserve the remaining assets by going to a more conservative portfolio.

Figure 2: Diminishing Resets



Source: Otar & Associates

Here is the dilemma you and your client are exposed to:

- If you go to the "preserve" mode too soon (shifting assets into fixed income from equities) and then markets move up subsequently, you may miss step-up resets. This could come back to haunt you. Your client will blame you for giving the wrong advice: "You made my portfolio too conservative, and therefore I missed a step-up. I lost a lifetime of higher future income. Pay me the difference now!"
- If you hang on to the "aggressive" mode too long and the markets go down, your client will blame you for giving the wrong advice: "You advised me to stay aggressive! I lost because of you!"

Sometimes, you cannot win, period.

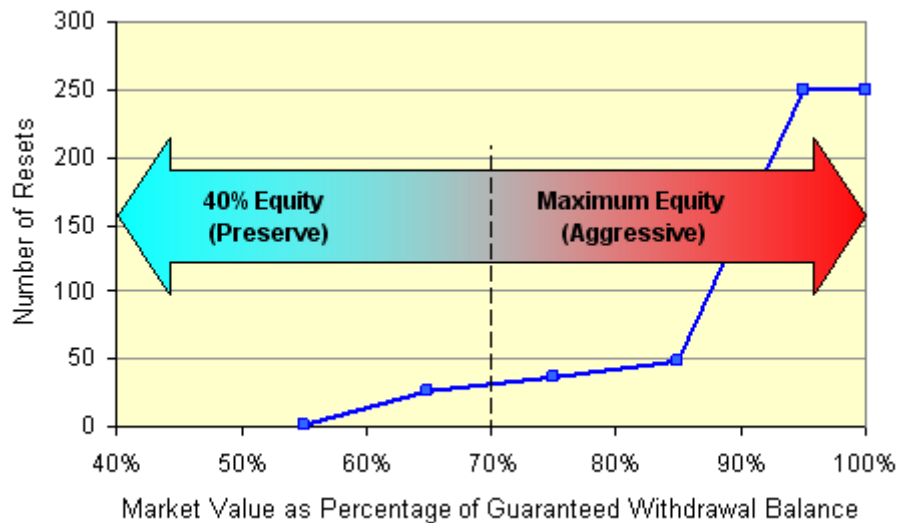
Here is my solution: I observe the gap between the guaranteed withdrawal base (GWB) and the contract (market) value of the account. Once this difference is large enough, there is no hope of triggering a step-up reset. Where is this point of no return? For that I turn to market history.

I counted the frequency of significant resets and noted the gap between the two levels (GWB and contract) for each and every year of retirement since 1900. Yes, it is a lot of work, but it's more rewarding than counting sheep.

Once the contract or market value dropped to 55% of the guaranteed withdrawal base, no reset ever occurred. Figure 3 depicts the number of resets (blue line) based on market

history since 1900:

Figure 3: History of Resets



Source: Otar & Associates

Based on this observation, here are some suggestions on asset allocation in VAGWs:

- Start with the most aggressive equity allocation that is permissible.
- Review your portfolio annually. After withdrawals start, when and if the contract (market) value goes to below 70% of the GWB on the year-end statement, abandon the aggressive stance and adopt a more conservative asset mix of 40% equity and 60% fixed income.

Company risk

There is one last factor in building a variable annuity retirement portfolio. With a VAGW, insurers are exposed to large liabilities occurring concurrently. In adverse markets, the portfolio values of nearly all VAGW accounts move down synchronously and eventually trigger guarantees. Managed portfolios may have a greater diversification and are supposedly optimized in the realm of the at-times-defective [Gaussian mindset](#). However, unlike accumulation portfolios, no amount of diversification can prevent permanent losses in distribution portfolios. So if you want the highest protection, deal with insurance companies with the highest ratings. The immediate temptation of bigger promises by some VAGW providers should always be weighed against future "unknown unknowns."

Note to Canadian readers: Findings and conclusions apply only to variable annuities available in the U.S. In all examples, the guarantee period is life, guaranteed withdrawal amount is 5% of the GWB, bonus 5% for a maximum of 10 years, and step-up resets are annual. The results for the Canadian variable annuities are significantly different.

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