

## Variable Annuities – Part 2 of 5

*Variable annuities with Guaranteed Minimum Withdrawal Benefits (GMWB) are making inroads to Canadian retirement planning. Here is a synopsis of facts about them based on the market history.*

By Jim Otar, CFP, CMT, M. Eng.

In my previous article, I went over the basics of Variable Annuities with Guaranteed Minimum Withdrawal Benefits (which I called VAG for short). In this article, I will cover some more details.

What happens if you need more than the 5% of the guaranteed balance? The exact calculation can be complicated. Here is an approximate answer: the guaranteed withdrawal balance will be adjusted down to the lesser of (A) the contract value or (B) the guaranteed withdrawal balance, immediately prior to withdrawal, less the withdrawal amount. Read the fine print, some contracts may allow you to withdraw over 5% up to a limit (usually 10%) without resetting to market value and reducing only the guaranteed withdrawal balance. In either case, your client will collect 5% of the new, reduced guaranteed withdrawal balance for the remaining of his guarantee period. One exception to this rule is registered accounts where the minimum RRIF payments exceed 5%. In such accounts, withdrawals are increased without triggering a reset, as long as no additional withdrawals over and above the RRIF minimum is taken.

What happens if you need less money than the 5% limit? Most contracts do not allow carry forward of withdrawals. Some insurance companies allow up to a certain limit (10% or 15% - read the fine print) in a subsequent year. My suggestion is to take out the entire annual guaranteed amount even if you don't need it and invest any surplus in a separate account. If you leave it in, you would be paying the additional fees for guarantees for no additional benefit.

Can you take out all of your money at anytime? You can withdraw all your investments at anytime, subject to redemption fees, unless it is a locked-in account. Just like any segregated fund, it is your money.

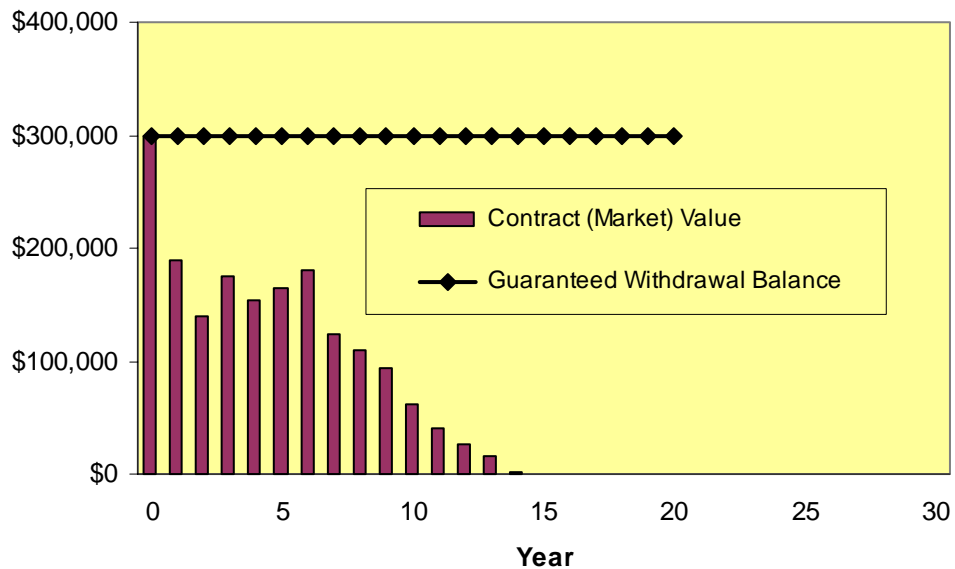
Let's go back to Bob's example in Part 1 and look at some numbers behind those graphs. The following table indicates the year, Bob's age, contract balance, guaranteed withdrawal balance, the annual and cumulative cost of the guarantee rider.

Year	Age	Contract Balance	Guaranteed Withdrawal Balance	Reset?	Withdrawal	Cost of Guarantees per year <sup>1</sup>	Cumulative Cost <sup>2</sup>
Start		\$300,000	\$300,000				
1949	65	\$313,753	\$300,000		\$15,000	\$3,000	\$3,120
1950	66	\$392,233	\$300,000		\$15,000	\$3,288	\$6,664
1951	67	\$420,678	\$392,233	✓	\$19,612	\$4,072	\$11,166
1952	68	\$374,046	\$392,233		\$19,612	\$4,403	\$16,191
1953	69	\$338,038	\$392,233		\$19,612	\$3,937	\$20,933
1954	70	\$398,717	\$392,233		\$19,612	\$3,576	\$25,490
1955	71	\$443,168	\$392,233		\$19,612	\$4,183	\$30,860
1956	72	\$434,579	\$392,233		\$19,612	\$4,628	\$36,907
1957	73	\$324,017	\$434,579	✓	\$21,729	\$4,542	\$43,107
1958	74	\$365,510	\$434,579		\$21,729	\$3,457	\$48,427
1959	75	\$341,678	\$434,579		\$21,729	\$3,872	\$54,392
1960	76	\$309,577	\$434,579		\$21,729	\$3,634	\$60,347
1961	77	\$353,194	\$434,579		\$21,729	\$3,313	\$66,206
1962	78	\$296,412	\$434,579		\$21,729	\$3,749	\$72,754
1963	79	\$297,436	\$434,579		\$21,729	\$3,181	\$78,972
1964	80	\$322,072	\$434,579		\$21,729	\$3,192	\$85,451
1965	81	\$303,821	\$434,579		\$21,729	\$3,438	\$92,444
1966	82	\$252,830	\$434,579		\$21,729	\$3,255	\$99,528
1967	83	\$255,941	\$434,579		\$21,729	\$2,746	\$106,364
1968	84	\$268,499	\$434,579		\$21,729	\$2,777	\$113,506
1969	85	\$235,936	\$434,579		\$21,729	\$2,902	\$121,065
1970	86	\$199,475	\$434,579		\$21,729	\$2,577	\$128,587
1971	87	\$182,458	\$434,579		\$21,729	\$2,212	\$136,031
1972	88	\$192,819	\$434,579		\$21,729	\$2,042	\$143,596
1973	89	\$165,368	\$434,579		\$21,729	\$2,145	\$151,571
1974	90	\$104,626	\$434,579		\$21,729	\$1,871	\$159,580
1975	91	\$92,711	\$434,579		\$21,729	\$1,264	\$167,277
1976	92	\$74,323	\$434,579		\$21,729	\$1,144	\$175,159
1977	93	\$54,421	\$434,579		\$21,729	\$961	\$183,164
1978	94	\$42,522	\$434,579		\$21,729	\$762	\$191,282

- Notes:
1. The cost of guarantees (GMWB, death, principal) is calculated as 1% of the contract value at the start of the year.
  2. Each year's annual rider cost is compounded by 4% annually to bring to present value at expiry.
  3. The asset mix is 80% SP/TSX index and 20% fixed income.  
Equity: alpha: 1%, MER 3%. Fixed Income: net yield 6-month CD interest rate

In this particular case, Bob was lucky. His contract balance survived until age 95. He did not need any minimum withdrawal guarantees. The total benefit of GMWB was zero. At age 95, the present value of guarantees was \$191,282 over the life of the contract, or 64% of his original investment. In this particular case, all of this money was wasted.

Let's take a look at retiring at the beginning of 1931. The chart shows the contract value and the guaranteed withdrawal balance if Bob were to buy this contract in 1931 and then retire.



The year 1931 was a not good year to retire. His portfolio (contract value) depleted in 14 years, at age 79. Fortunately, Bob’s VAG contract paid him until he is 85, even though his portfolio expired at age 79.

Next time, in Part 3, I will analyze the consequences of this scenario. Get ready; the plot is thickening.

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