Optimizing portfolio outcomes

An analysis of Investment Edge® Segments by Wade D. Pfau, Ph.D., CFA®, RICP®

Given recent stock and bond market returns, investors are looking for new strategies to help improve portfolio outcomes.

A recent analysis conducted by Wade Pfau, Ph.D., CFA®, RICP®, shows how adding structured investment options available in the Investment Edge® variable annuity to a portfolio of stocks and bonds can improve portfolio outcomes.

Let's take a look at the assumptions for Dr. Pfau's research. The Segments included below are 1-year durations:

- **Standard Segment** tracks the index from point to point, providing a level of protection and upside potential up to a cap.
- **Dual Direction Segment** provides the absolute value of the index return, as long as the return is within the Segment Buffer, as well as upside potential up to a cap rate when the market is positive.
- **Dual Step Up Segment** provides a guaranteed return equal to the Performance Cap Rate as long as the index return is equal to or above the Segment Buffer.

For Series B, the 1% contract fee is deducted from the Segment Maturity Value.

Capital market expectations[1]

	Arithmetic mean	Compounded return	Standard deviation
U.S. Large Cap Equity	8.6%	7%	17.7%
U.S. Aggregate Bonds	4.5%	4.4%	5.1%

These hypothetical returns, presented here for illustrative purposes, are based on BlackRock capital market assumptions (CMA) and are not a guarantee of future results. Source: BlackRock Investment Institute, November 2023. Data as of September 30, 2023. Return expectations over 30 years for gross total nominal returns.

Structured strategies for a variable annuity with 1-year Segments

	Segment Buffer	Effective Cap Rate
Standard Segments	10%	20%
	15%	15.5%
	20%	13%
	40%	11%
Dual Direction Segments	10%	16%
	15%	11.5%
	20%	8.5%
Dual Step Up Segments	10%	10%
	15%	9%
	20%	7.5%

1 Return assumptions are total nominal returns. BlackRock's CMAs generate market, or beta, geometric return expectations. Asset return expectations are gross of fees. Forecasted future performance is not a reliable indicator of future results. BlackRock uses long-term volatility and correlation expectations. BlackRock breaks down each asset class into factor exposures and analyzes those factors' historical volatilities and correlations over the past 20 years. This approach takes into account how asset classes evolve over time. Example: Some fixed income indices are of shorter or longer duration than they were in the past. The expectations reflect these changes, whereas a volatility calculation based only on historical monthly index returns would fail to capture the shifts. Indices are unmanaged and used for illustrative purposes only. They are not intended to be indicative of any fund or strategy's performance. It is not possible to invest directly in an index.

Return statistics for investments and structured annuity Segments, 1-year Segment duration

	Segment buffer	Effective cap rate	Compounded return	Standard deviation	Sharpe ratio	Upside capture	Downside capture
Stocks	n/a	n/a	6%	17.7%	0.43	100%	100%
Bonds	n/a	n/a	3.4%	5.1%	0.69	20%	-34%
60/40 Portfolio	n/a	n/a	5.4%	10.8%	0.55	68%	46%
Standard Segments	10%	20%	5.5%	10%	0.60	67%	42%
	15%	15.5%	5.2%	7.7%	0.72	57%	25%
	20%	13%	4.9%	6.2%	0.81	50%	16%
	40%	11%	4.4%	5%	0.90	44%	10%
Dual Direction Segment	10%	16%	5.6%	8.4%	0.71	58%	15%
	15%	11.5%	5.9%	5.8%	1.04	45%	-26%
	20%	8.5%	5.9%	4.6%	1.31	35%	-58%
Dual Step Up Segment	10%	10%	6%	6.8%	0.92	52%	-11%
	15%	9%	6.5%	4.6%	1.45	46%	-41%
	20%	7.5%	5.9%	2.7%	2.19	37%	-49%

The chart above uses **100,000 Monte Carlo simulations** to compare stocks, bonds, and a 60/40 stock and bond allocation with the Standard, Dual Direction and Dual Step Up Segments.

Let's take a look at three Segment Types highlighted in Dr. Pfau's analysis on the previous page.

1 | Standard -40% Buffer Segment

The Standard -40% Buffer Segment provides a compounded return comparable to the 60/40 portfolio with a better standard deviation and Sharpe ratio. While the compounded return is slightly lower than the typical 60/40 portfolio, the improved standard deviation and compounded return highlight its ability to reduce volatility and standardize returns when incorporated as a piece of a portfolio.

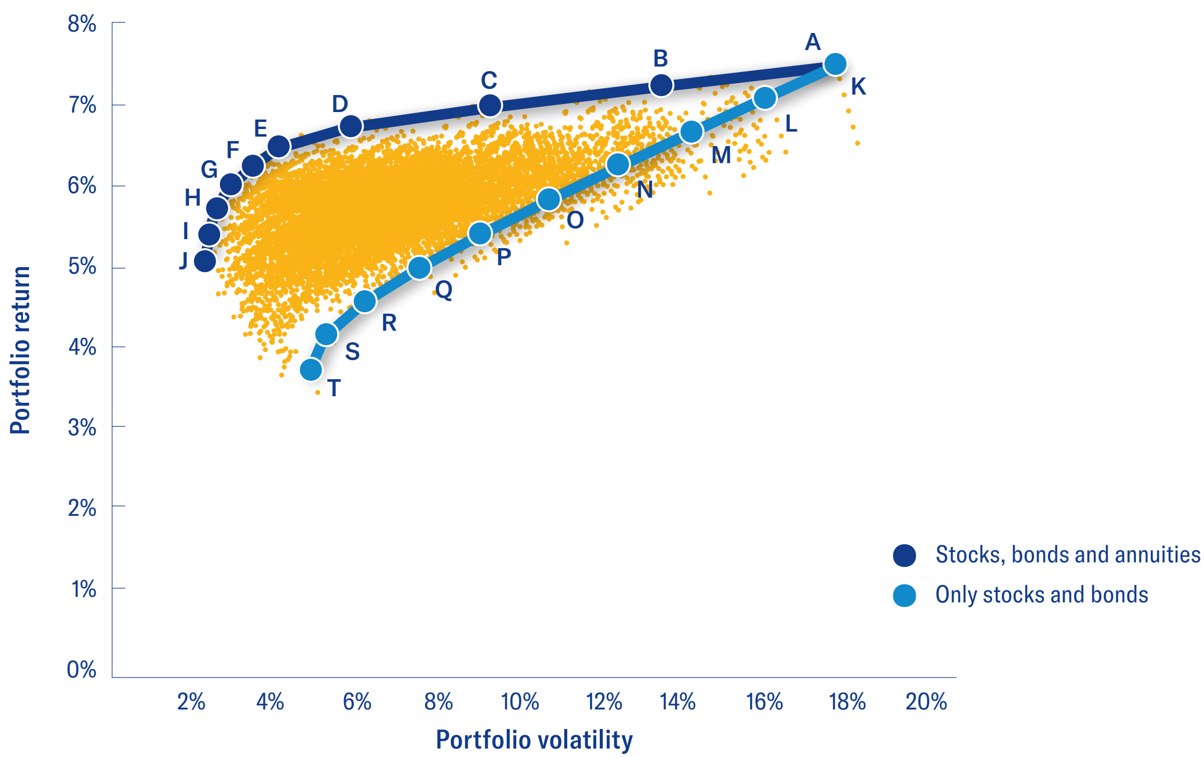
2 | Dual Direction -20% Buffer Segment

The Dual Direction -20% Buffer Segment with an 8.5% Performance Cap Rate provides a greater compounded return than the 60/40 portfolio, while reducing standard deviation and increasing Sharpe ratio. Where the Dual Direction -20% Segment stands out is its downside capture of -58%, the greatest of any Segment analyzed, indicative of the Segment's performance in down markets relative to the index. The ability to flip -20% losses to a positive 20% may make this an appropriate choice for offsetting losses in the stock or bond market.

3 | Dual Step Up -20% Buffer Segment

Like Dual Direction, **the Dual Step Up -20% Buffer Segment** with a 7.5% Performance Cap Rate improves compounded return when compared against the 60/40 portfolio while reducing volatility. While the upside capture is reduced as a result of the 7.5% limit on gains, the Dual Step Up -20% Segment offers greater consistency compared to any investment type analyzed. Looking at historical S&P 500 returns, a client would have received the guaranteed 7.5% return 95.5% of the time. In the remaining 4.5% of returns, the loss would be much smaller due to the -20% buffer. This likeliness of a 7.5% return or small loss also helps explain the standard deviation and Sharpe ratio, both the greatest compared with any other investment.

The chart below plots the portfolio returns and volatilities for different combinations of stocks, bonds and the annuity Segment Types based on their simulated return, standard deviation and correlation characteristics. Dr. Pfau uses mean-variance optimizer software, which uses these inputs to find the efficient frontier of allocations that provide the most return for a given volatility or the least volatility for a given return. Investors would like to move toward portfolios in the upper left-hand corner, all else being the same, as that direction represents portfolios with higher returns and less volatility. The dots reflect the different combinations for these investments and annuities. The dark blue curve that envelops them on the upper-left side is the efficient frontier. It is the asset class combinations offering the highest returns for a given volatility, or the least volatility for a given return. Households should consider asset allocation combinations from the many combinations reflecting different risk-return characteristics on the efficient frontier. The light blue-colored curve is the constrained efficient frontier if only stocks and bonds can be used.



The charts above are hypothetical based on an analysis conducted by Wade Pfau using BlackRock capital market assumptions. They are not indicative of future results.

The chart below provides an example of 10 portfolios on the efficient frontier shown in the previous exhibit. These range from the highest return and volatility combinations to the lowest return and volatility combinations. For example, the first portfolio is listed with a 7.6% return and 17.7% volatility. These are the characteristics for allocating 100% of assets to stocks. Then, as we move down the list, we find portfolios with decreasing returns and volatilities that contain decreasing allocations to stocks and a shift toward bonds and other annuities. The four annuity Segments that appear in allocations on the frontier are the options with the lowest standard deviations from the previous page, as well as the -15% Dual Step Up Segment. The last portfolio listed has a return of 5.3% and a standard deviation of 2.3%. This allocation consists of 21% to bonds, 13% to the Standard Segment with a 40% buffer, and 66% to the Dual Step Up Segment with a 20% buffer.

Data label	Portfolio return	Portfolio standard deviation	Asset weights					
			Stocks	Bonds	Standard Segment (40% Buffer)	Dual Direction Segment (20% Buffer)	Dual Step Up Segment (15% Buffer)	Dual Step Up Segment (20% Buffer)
A	7.6%	17.7%	100%	0%	0%	0%	0%	0%
B	7.3%	13.6%	73%	0%	0%	0%	27%	0%
C	7.1%	9.6%	46%	0%	0%	0%	54%	0%
D	6.8%	6.1%	19%	0%	0%	0%	81%	0%
E	6.6%	4.2%	0%	0%	0%	12%	88%	0%
F	6.3%	3.4%	0%	0%	0%	21%	49%	30%
G	6%	2.9%	0%	0%	0%	6%	12%	83%
H	5.8%	2.5%	0%	5%	4%	0%	0%	91%
I	5.5%	2.4%	0%	13%	8%	0%	0%	79%
J	5.3%	2.3%	0%	21%	13%	0%	0%	66%

Data label	Portfolio return	Portfolio standard deviation	Asset weights	
			Stocks	Bonds
K	7.6%	17.7%	100%	0%
L	7.2%	15.9%	90%	10%
M	6.7%	14.1%	79%	21%
N	6.3%	12.4%	69%	31%
O	5.9%	10.6%	59%	41%
P	5.5%	9%	49%	51%
Q	5.1%	7.5%	38%	62%
R	4.6%	6.2%	28%	72%
S	4.2%	5.2%	18%	82%
T	3.8%	4.9%	8%	92%

If we constrain the analysis to use only stocks and bonds, we generate inferior outcomes. The chart on the left provides a sampling of 10 portfolios from the constrained efficient frontier that only allows for stocks and bonds to be included. As an example of the differences, one portfolio from the previous exhibit provided a 6.3% return with a 3.4% standard deviation. When the portfolio is constrained to stocks and bonds, a 6.3% return is only possible when accepting greater risk with a 12.4% standard deviation.

The charts above are hypothetical based on an analysis conducted by Wade Pfau using BlackRock capital market assumptions. They are not indicative of future results.

Optimizing returns in one portfolio with Investment Edge®

Investment Edge® offers over 180 investment options, including both traditional stock and bond subaccounts, as well as buffered options like the Standard, Dual Direction and Dual Step Up included in Dr. Pfau's research.

This innovation allows investors to mix and match stocks, bonds and Segments within one investment vehicle, providing the opportunity to shift the efficient frontier up and to the left and potentially achieve greater return with less risk.

Upside potential

Individual investment options and packaged portfolios

More than 100 options

A level of downside protection

Structured Investment Option

Standard, Dual Direction, Step Up and Dual Step Up

Clients are protected from some downside risk; if the negative return is in excess of the protection level, there is a risk of substantial loss of principal because the client agrees to absorb all losses to the extent they exceed the protection provided.

View the latest Segment Performance Cap Rates at equitable.com/cap-rates.
For more information, visit equitable.com/ie.

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Important information

This piece is not intended to predict or guarantee any particular outcome or client experience, does not provide a complete description of annuities, and should not be considered annuity or financial advice. Investing involves risk, including loss of principal invested. Individual investor results and tax ramifications will vary. Historical economic and performance data is not indicative of future results.

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Standard Segment — For Standard Segments, the Segment Rate of Return is equal to the index performance rate, subject to the Performance Cap Rate and Segment Buffer, less any contract fees.

Dual Direction Segment — Dual Direction Segments measure the performance of the index from Segment Start Date to Segment Maturity Date. If the corresponding index performance rate exceeds the Performance Cap Rate during this time period, the investor receives the Performance Cap Rate less any contract fees. If the index performance rate is between the Performance Cap Rate and Segment Buffer (inclusive of both), the investor receives the absolute value of the index performance less any contract fees. If the index performance rate is less than the Segment Buffer, the Segment Buffer will absorb up to the first 20% of the loss depending on the Segment Buffer elected.

Dual Step Up Segment — For Dual Step Up Segments, the Segment Rate of Return is equal to the Performance Cap Rate, less any contract fees, if the index performance rate for that Segment is greater than or equal to the Segment Buffer or the index performance rate, subject to the Segment Buffer if the index performance rate is less than the Segment Buffer.

A variable annuity is a long-term financial product designed for retirement purposes. Variable annuities are subject to market risk, including the possible loss of principal invested, and they have mortality and expense charges, account fees, investment management fees, administrative fees, charges for special contract features, and restrictions and limitations. Earnings are taxable as ordinary income when distributed and may be subject to a 10% additional tax if withdrawn before age 59½.

Clients are protected from some downside risk; if the negative return is in excess of the protection level, there is a risk of substantial loss of principal because the client agrees to absorb all losses to the extent they exceed the protection provided.

If clients are purchasing an annuity contract to fund an IRA or employer-sponsored retirement plan, they should understand that such annuities do not provide tax deferral benefits beyond those already provided by the Internal Revenue Code.

Clients should carefully consider their investment objectives and the charges, risks and expenses, as stipulated in the prospectus, before investing. For a prospectus containing this and other information, a financial professional can call the Sales Desk at (888) 517-9900. Please have clients read it carefully before investing or sending money.

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