

Portfolio Income Insurance: Understanding the Benefits of a Contingent Deferred Annuity

by Michael Finke, PhD
Professor, Frank M. Engel Chair of Economic Security
The American College of Financial Services

- Longer lifespans of higher-income retirees place today's retiree at greater risk of outliving savings if markets underperform.
- Investment risk offers the potential for greater income and legacy, but there can be no upside without the possibility of investment losses that can strain a portfolio's ability to provide reliable income for more than 20-30 years.
- A retiree who invests in an unprotected retirement portfolio will need to significantly reduce spending to avoid the risk of outliving savings if market fall early in retirement.
- A new kind of solution called a Contingent Deferred Annuity ("CDA") provides lifetime income protection for an investment portfolio via a pure insurance product that does not require the protected assets be held within an annuity structure.
- The income paid by the insurer is contingent upon the depletion of a retiree's wealth, and is therefore deferred until the future when income assistance is needed. Insuring the income stream against depletion guarantees that the retiree will be able to spend a fixed amount in retirement regardless of how markets behave.
- Establishing a fixed guaranteed stream of income for life may enable individual investors to confidently allocate more to equities without the fear/concern that a terrible market event will force them to spend much less than planned in retirement. As such, this "portfolio income insurance" can offer more upside potential than a portfolio of bonds or traditional income annuities.
- A CDA preserves the possible gain from taking risk while eliminating the downside consequence of low returns on spending.



Introduction

A 65-year old couple seeks the help of a financial advisor to determine how much they can withdraw each year from a \$1 million nest egg to support a lifestyle in retirement. The advisor assures them that they should be able to spend \$45,000 (4.5%) each year by investing in a balanced portfolio of stocks and bonds. The couple asks what will happen if the stock market

Think of a contingent deferred annuity as portfolio income insurance.

crashes? The advisor responds that historically investors in United States stocks and bonds could have safely withdrawn this amount for 25 to 30 years.

The uncertainty isn't reassuring. "What if we live longer than 25 to 30 years? And what if my investments don't earn the same returns they have in the past? Will you guarantee that we'll be able to spend the same amount?"

No financial advisor can provide this guarantee of lifetime income using conventional investments alone. However, it is now possible to buy insurance through a contingent deferred annuity that will offer lifetime income protection for an investment portfolio through a pure insurance product that does not require that the protected assets be held within an annuity structure.

Think of a contingent deferred annuity as portfolio income insurance. Insurance is a contract which allows an individual to avoid

the possibility of a significant random loss that occurs due to circumstances beyond their control. A fire or a car accident are random events that could have devastating financial consequences. Similarly, running out of savings in retirement is caused by random financial market returns and unknown longevity.

A contingent deferred annuity is a guarantee by an insurance company to pay a lifetime income (also known as an annuity) after a retiree has exhausted their savings. The income paid by the insurer is contingent because it only begins when a retiree's wealth is depleted. The lifetime income guarantee is deferred because the insurance company is obligated to make payments in the future when and if the lifetime income assistance is needed.

In other words, it is possible for an institution to guarantee that a retiree will always be able to spend a fixed amount in retirement no matter what happens in financial markets. Portfolio insurance through a CDA provides the freedom to spend without the fear of running out.

Understand Retirement Spending Risk

The average growth on a portfolio of 50% long-term US stocks and 50% Treasury bills was 7.35% between 1926 and 2021. It would seem logical then that a retiree could safely spend 5%, or \$25,000, from a \$500,000 portfolio of stocks and bonds.

However, the historical returns are merely an average. Some investors retired during historical periods when returns were higher than 7.35%,



and some when returns were lower. More important than the average returns during retirement are the returns received early in retirement.

Returns on risky assets like stocks are random. However, we can predict what returns will be on average and we can also predict the range of possible returns (for example, in February 2022 BlackRock predicts an expected 10-year return on U.S. stocks of 6.7%¹). Since stocks are risky, we can expect returns each year to be higher or lower than the average. The expected difference from 6.7% each year is known as the dispersion, measured as the standard deviation from the mean.

Retirement researchers often use a so-called Monte Carlo analysis to estimate the probability a retiree can spend a given amount each year in retirement. A Monte Carlo analysis simulates thousands of possible retirements with projected returns each year. The investment return is most often close to the mean, but occasionally is either higher or lower than the average. In some simulations, retirees will get lucky. Returns will be above average and they will have more than enough to meet their spending goals. In other simulations they won't be as lucky.

A 65-year old healthy woman has about a 25% chance of living beyond the age of 95 according to the 2012 Society of Actuaries individual annuity mortality table. What are the chances that she can safely spend \$45,000 each year from a \$1 million portfolio consisting of 60% large stocks and 40% corporate bonds using today's capital market expectations?

We can use a Monte Carlo analysis² to estimate the percent of simulated retirements that will

successfully provide \$45,000 of annual income. There is a 77.3% chance that the income will last until age 95.

She may assume that her 77% chance of success will continue throughout retirement. In reality, she only has a 77% chance of being able to safely spend \$45,000 of income the first day of retirement. If her investments perform well during the first year of retirement, she may be able to increase her spending while still maintaining the same 77% probability of success. If her investments perform poorly, however, she will need to spend less to maintain the same probability of not running out of money before age 95.

Table 1: Impact of First Year Investment Returns on Retirement Income Security

Year 1 Investment Returns	Year 2 Probability of Spending \$45,000 to Age 95	Year 2 Spending With Same Success as Year 1
-30%	37.4%	\$30,149
-20%	51.8%	\$34,456
-10%	66.4%	\$38,764
0%	75.9%	\$43,930
10%	82.0%	\$47,378
20%	88.7%	\$51,685
30%	91.8%	\$55,992

The retiree believed that she could safely spend \$45,000 each year from the original \$1 million investment portfolio. During the first year, the market declined by 20%. After depositing \$45,000 in her checking account to fund spending, she now has \$764,000 of investments that need to fund \$45,000 for the next 29 years. Unfortunately, there is now only a 51.8% probability that she will be able to fund \$45,000 of spending for the next 29 years with her much smaller nest egg.



Of course, there is also a potential benefit from taking investment risk. On average, investment risk increases the value of their portfolio over time. If a retiree gets lucky, they can maintain their spending and grow their investments over time.

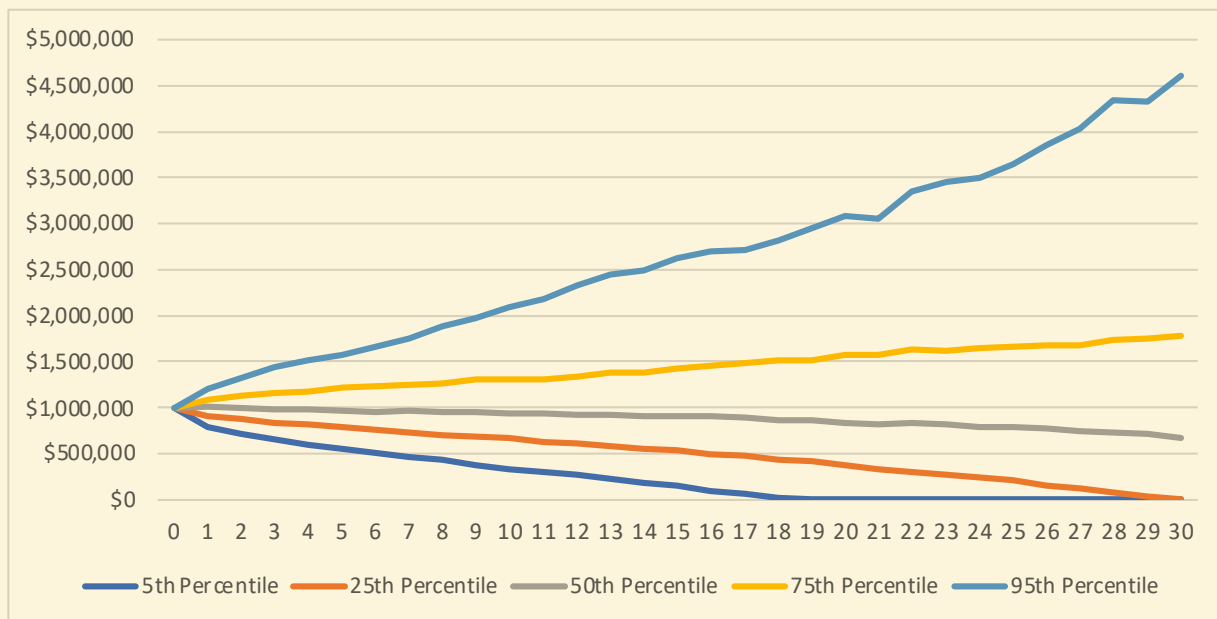
Figure 1 shows growth in the balance of a retiree’s savings at various percentiles over a 30-year time horizon based on the Monte Carlo analysis. By taking investment risk, most retirees are able to maintain their \$45,000 income goal over 30 years in retirement. Lucky retirees at the 75th percentile will see their legacy rise to \$1.78 million, and at the 95th percentile a retiree will accumulate over \$4.5 million.

One in four 65-year old retirees will run out of money by age 96.

An unlucky retiree faces either the prospect of cutting back on their spending early in retirement, or continuing to spend \$45,000 and accepting a higher risk of running out. At the 5th percentile, the retiree has no more savings at age 85. A significant loss in their investments requires a readjustment of annual spending that some retirees may not be willing to accept. At retirement, none of us know if we will be lucky or unlucky.

How should a retiree ensure the safety of their \$45,000 income goal? Taking investment risk leaves a retiree exposed to the possibility of spending less if investments underperform. At today’s low interest rates, a retiree will run out of money by age 94 investing 100% of their \$1 million in safe Treasury bonds with an average annual yield of 2%.

Figure 1: Change in \$1 million Initial 60% Stock Portfolio Funding \$45,000 Annual Income



Portfolio Income Insurance with a Contingent Deferred Annuity

Consider receiving a phone call from your spouse letting you know that a few of your son's friends are at the park and will be stopping afterward for a birthday celebration. There is a birthday cake on the counter and the friends will be dropped off by their parents one at a time. When they arrive, you'll need to serve them a slice of the birthday cake. Oh, and there may be between 10 and 40 friends stopping by.

How large of a slice would you cut the first friend? If the slice is too thick, there may be none left to feed the 20th kid who shows up resulting in tears and major disappointment. To avoid this risk, you cut a small slices. By doing so, the kids who showed up early aren't happy with their tiny slice of cake.

Would you act differently if you knew that there was a bakery who guaranteed to provide a second cake after the last slice was served? You'd cut a bigger slice and be free of the anxiety of disappointing the 20th kid. This is the choice faced by a retiree who does not know how large of a slice they can cut from their retirement savings at the beginning of retirement when faced with the risk of potentially running out. If there was a guarantee against running out, a retiree could spend more with less fear.

A 2021 survey of workers found that the most frequently cited concern about living in retirement is that "I won't have enough money to live at the same level as today³." An advisor can allay this fear by purchasing portfolio income insurance.

Portfolio insurance allows a retiree to maintain a lifestyle free of the possibility that spending today could jeopardize their ability to live well later in retirement.

A retiree can buy portfolio income insurance using a contingent deferred annuity (CDA). The insurance premium is a percentage of a retiree's investments. In return, the insurance company guarantees the ability to withdraw a fixed dollar amount from an investment portfolio for a lifetime.

The CDA protects against the equivalent of a house fire in retirement. What if a retiree experiences a 20% drop in a balanced investment portfolio? This scenario last occurred in 2008, and could occur any time in the future. A CDA protects the retiree against having to choose between a much higher risk of running out of money or of cutting back on spending to maintain a comfortable amount of income security. The retiree can simply ignore financial markets and continue to spend \$45,000 without the fear of outliving their savings.

It may be helpful to compare portfolio income insurance to home insurance. Insurance is valuable because a homeowner or a retiree can live their life without fear. A homeowner with no insurance may avoid moving close to the beach, lighting candles, or installing a skylight. Their joy of owning a home is limited by the fear of risk.



Likewise, a retiree who is exposed to the risk of outliving savings may feel less comfortable going on a vacation or eating dinner with friends if the value of their investments falls. Portfolio insurance allows a retiree to maintain a lifestyle free of the possibility that spending today could jeopardize their ability to live well later in retirement.

How Does a CDA Work?

A retiree is at risk of outliving savings if they either live too long or if they experience disappointing investment returns. Insurance companies are experts at estimating the expected longevity of a group of individuals, and can combine, or pool, the insurance premiums in a general account that can be used to fund spending of those who live longer than average. This service is referred to as longevity risk pooling, and a portion of the CDA premium will be used to provide payments to long-lived retirees.

An insurance company can also protect an investor against the risk of loss through the use of financial options. A portion of the CDA premium may be used to purchase options that provide a higher payout when the value of an investment portfolio falls. This concept is referred to as hedging investment risk.

Why may an option-protected retirement investment portfolio be more attractive than simply taking less investment risk? A retiree can reduce the risk of investment loss by investing a higher percentage of their savings in less volatile assets. This will reduce the likelihood of a severe downturn, but offers little possibility of higher spending or a more generous bequest if riskier investments such as stocks produce a higher return.

In other words, taking no risk offers no upside potential. An investment portfolio will not grow without the reward investors have historically received from taking risk. The so-called upside potential can be seen in Figure 1. Investment risk results in a higher bequest, or higher spending, when a retiree receives healthy returns.

Financial advisors managing a portfolio of investments may decide to insure a portfolio for the first decade of retirement when a retiree's lifestyle is at greatest risk. If the retiree is unlucky, they will continue to pay for the CDA until their investments are depleted. At this point, the insurance company will pay the insurance claim by sending the retiree \$45,000 as long as they live.

A lucky retiree may decide that they no longer need the insurance if investment returns are higher than expected the first decade of retirement. For example, if investments perform as expected and the retiree still has \$1 million at age 75 they now have a 95% likelihood that their savings will produce \$45,000 of income for the next 20 years.

By providing the same lifetime income protection as any other annuity, a CDA provides the same benefits of greater optimal lifetime spending – also known as mortality credits. However, the CDA is the smallest annuity footprint that an advisor can use to achieve the benefits of mortality credits by providing portfolio income insurance for a fee only as long as it is needed.

How a CDA Impacts Income

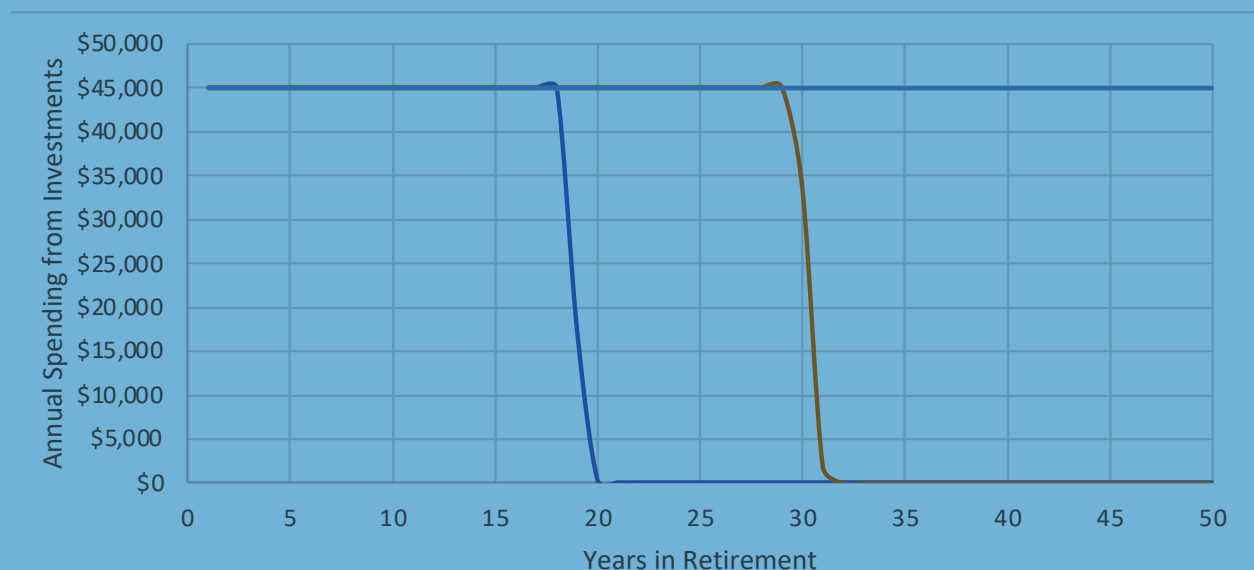
A CDA premium is levied on a retiree's investments each year. In the following



examples, I will assume that the premium cost is 1.50% per year. The insurance company collects CDA premiums from investors and agrees to provide the lifetime income guarantee.

Figure 2 shows the income paths when a retiree withdraws \$45,000 from a \$1 million portfolio invested in 60% stocks and 40% bonds at various percentiles with randomized returns. The median 65-year old retiree will have enough savings to support a \$45,000 income for more than 50 years. It is safe to say that she will die with unspent savings. The higher expected legacy value is a benefit from accepting investment risk.

Figure 2: Income Path of \$1 million 60% Stock Investment Portfolio with \$45,000 Withdrawals



Below the 25th percentile the retiree is unable to sustain her \$45,000 income goal for more than 30 years.

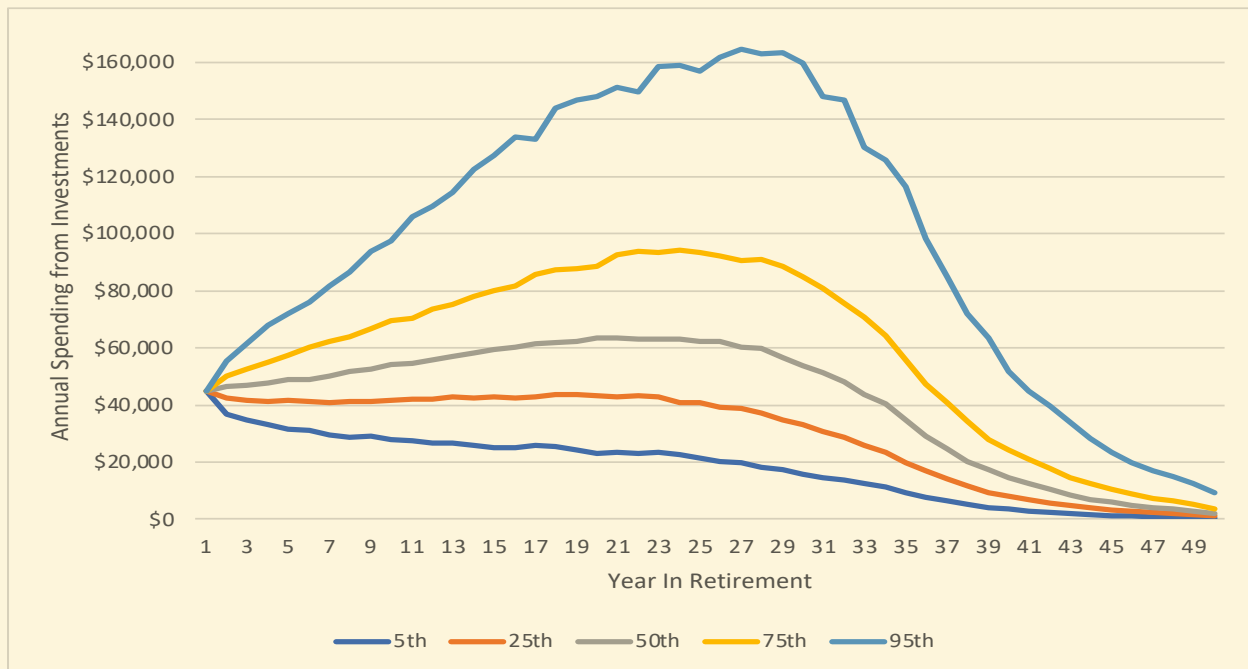
Buying insurance trades growth in wealth over time for income certainty. The retiree gives up some of the upside legacy wealth (or the potential to increase spending) if markets perform well, but gains protection if markets perform poorly. This is the purpose of insurance. A risk-averse individual accepts a modest decrease in wealth in order to avoid the possibility of a significant and random negative event.

What if a retiree had simply maintained the same probability of success throughout retirement by adjusting her income up or down when her investments rise or fall in value?



Figure 3 shows what a retiree's spending path would look like if she adjusts her spending each year to maintain the same probability that her savings can support the income for a lifetime. This income is comparable to the use of required minimum distribution (RMD) which apply a percentage based on expected longevity to the retiree's existing investment balance.

Figure 3: Annual Spending with Fixed Probability of Success



The spending paths in Figure 3 reflect the reality that a retiree who accepts investment risk cannot also expect stable spending. As volatile investments rise and fall in value, so does a retiree's ability to safely withdraw spending from their investments. While the paths reflect the potential of much higher lifestyles for lucky retirees, it also shows the downward adjustments that less fortunate retirees need to make in order to avoid the depletion of savings illustrated in Figure 2.

Investment risk requires spending flexibility. A retiree who receives returns below their expectations must either adjust spending gradually or be exposed to a sharp decrease in

lifestyle when wealth falls to zero. Even lucky retirees are exposed to the risk of a drop in lifestyle if they live too long.

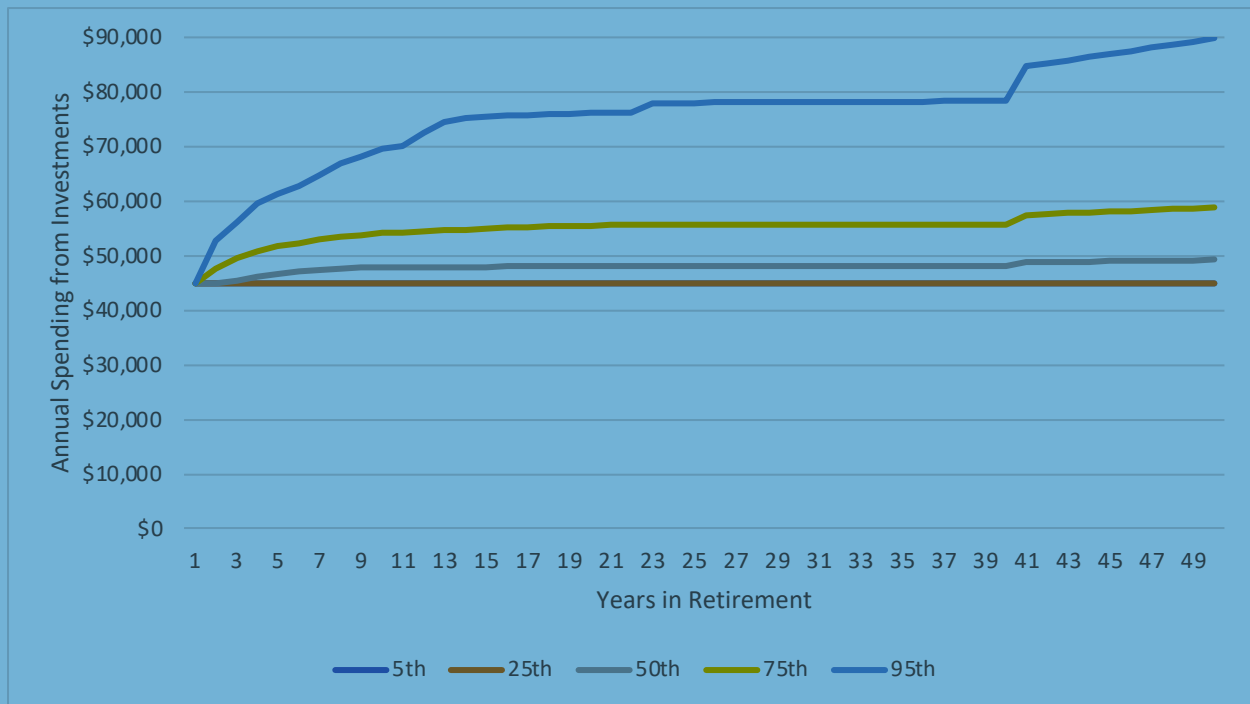
How can a retiree avoid spending risk by buying lifetime income protection through a CDA? Because a retiree who holds a portfolio of stocks and bonds accepts investment risk, they can also benefit from the upside potential of strong market returns. The income guarantee adjusts upward to the new portfolio value, allowing a lucky retiree to increase their annual spending. Upside also increases the size of the potential bequest. Of course, the portfolio value will be slightly less than an unprotected portfolio to reflect the cost of the insurance premium.



Figure 4 shows a spending path from an investment portfolio that includes portfolio income insurance through a CDA. At the 5th and 25th percentiles, the retiree can spend \$45,000 a year for life. In Figures 2 and 3, we can see that without a CDA a retiree is either at risk of dropping from \$45,000 to \$0 by outliving their savings, or (Figure 3) will need to decrease spending well below \$45,000 in response to unfavorable investment returns early in retirement.

A CDA provides a guarantee that the retiree can spend at least the goal amount of \$45,000 for a lifetime.

Figure 4: Annual Spending with Retirement Income



The benefit from the CDA increases the guaranteed income amount if a retiree’s portfolio value increases. A 4.5% income guarantee will rise beyond \$45,000 if the so-called benefit base on which the guarantee is calculated rises over time. This allows the retiree to also benefit from upside investment growth like a retiree who does not use a CDA, although the income growth is more modest, while also insuring against the risk of a decline in spending from downside risk.

The tradeoff of buying a CDA is the expense of insurance. This expense reduces the potential spending upside in the most favorable investment environments, and the insurance cost contributes a slight reduction in the size of the average bequest. Average bequests will also be lower with a CDA because a retiree does not have to adjust their income downward in the face of lower than expected investment returns.



...the CDA gives the retiree a license to spend their savings in retirement while unprotected investments demand greater caution.

An important benefit of a CDA is also a reason why an average bequest will be less than a dynamic spending strategy using an uninsured investment portfolio. A 2007 retiree who experienced a 20% decline in their investments in 2008 would rationally cut spending by more than \$10,000 in order to maintain the same probability of avoiding financial ruin later in retirement.

This spending cut would show up as a higher bequest in a simulation because the unfortunate retiree without insurance needed to conserve her assets in the face of low returns. A retiree with a CDA would continue to spend \$45,000 each year with no fear of running out. In essence, the CDA gives the retiree a license to spend their savings in retirement while unprotected investments demand greater caution.

Conclusions

A contingent deferred annuity is an insurance policy that protects a retiree's spending against the risk of lower than expected investment returns and unknown longevity. Many retirees are uncomfortable facing the risk that factors outside their control will dictate the amount they can safely spend each year. A CDA provides the assurance that a retiree can spend without the fear of outliving savings.

Compared to a portfolio of bonds or traditional income annuities, the CDA-insured portfolio offers greater upside potential. If stocks outperform bonds, the retiree will accumulate a larger nest egg over time. Greater retirement wealth can result in higher spending or a more substantial legacy as a reward for accepting investment risk. A CDA preserves the possible gain from taking risk while eliminating the downside consequence of low returns on spending.

A CDA preserves the possible gain from taking risk while eliminating the downside consequence of low returns on spending.





Michael Finke, PhD, is Professor of Wealth Management, Director for the Granum Center for Financial Security, and the Frank M. Engle Distinguished Chair in Economic Security at The American College of Financial Services. He is a nationally renowned researcher with a focus on the value of financial advice, financial planning regulation, investments, and individual investor behavior. His research conducted with fellow professor Wade Pfau questioning the 4% rule of retirement planning was published in the Journal of Financial Planning and won the 2014 Montgomery-Warschauer award for most influential article. Finke has published more than 50 peer-reviewed articles and is widely quoted in many of the nation's leading consumer publications, including The Wall Street Journal, The New York Times, Time, and Money Magazine. Finke received a doctorate in consumer economics from The Ohio State University in 1998 and in finance from the University of Missouri in 2011, and his CFP® in 2006.



1 Source: BlackRock. <https://www.BlackRock.com/institutions/en-us/insights/charts/capital-market-assumptions>.

2 Monte Carlo Assumptions based on BlackRock 10-year Capital Market Expectations are 6.7% for U.S. equities, 2.0% for U.S. long-term corporate bonds. Expected dispersion is set equal to the historical average of 19.53% for U.S. large-cap stocks and 8.42% for U.S. long-term corporate bonds, with a 0.16 correlation.

3 AllianceBernstein, "Inside the Minds of Plan Participants," 2021 survey of 1,015 workers age 18-75.

Securities offered through EF Legacy Securities, LLC (EFLS). EFLS is a member of FINRA/SIPC, registered in all 50 states and is a licensed insurance agency (resident KY license no. DOI-896601). In CA, EFLS is doing business as EF Legacy Insurance Agency LLC (nonresident license no. 0L01472).

Non-registered insurance products are sold by RetireOne, Inc. (RetireOne), a licensed insurance agency (resident KY license no. DOI-778494). In CA and AR, non-registered insurance products are sold by Aria Retirement Solutions, Inc (Aria). In CA, Aria is doing business as Aria Insurance Solutions, Inc., (nonresident license no. 0H44773).

FOR FINANCIAL PROFESSIONAL USE ONLY. NOT FOR CONSUMER USE.

20220325-EFLS-A035

RetireOne[®]

