

Deferred Income Annuities: Reducing Longevity Risk in Retirement Planning

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Abstract: Longevity is one of the greatest risks in retirement income planning, and one of the hardest risks to address. Individuals are living longer, which means building a retirement plan based on an arbitrary end date gathered from life expectancy tables is not sufficient planning to address this risk. Saving enough capital and withdrawing a certain percent every year is not an effective plan for retirement income either. Without a guaranteed income stream, individuals will be left open to the risk of outliving their assets. The purpose of this paper is to propose the use of a deferred income annuity as a potential solution to hedge against this risk. A case study is used to illustrate how a financial advisor can use a deferred income annuity to provide his or her client with a product that offers a potential solution to the longevity risk problem.

Introduction

As modern medicine continues to advance, individuals are living longer. The average life expectancy in the United States today is 78.24 years—75.78 years for men and 80.81 years for women.¹ Although a long life is a blessing, it can create uncertainty and anxiety as individuals plan their retirement incomes. This fear of outliving one's assets is commonly referred to as "longevity risk." This longevity risk, or the concern of not having enough money to cover basic expenses throughout retirement, ranked above all other categories in an industry survey of retirees (MetLife Retirement IQ, 2011).

Identifying the lowest-risk retirement strategy for an individual, one in which the ultimate goal is ensuring that the client has sufficient funds to maintain a desired standard of living throughout his or her "golden years," is what all financial advisors desire. With the continued decline of defined-benefit plans (DBPs) and the growing concern that Social Security may run dry, many retirees fear coming up short. To cover the income gap—the difference between the funds needed to maintain a desired standard of living and the funds they actually have—some retirees have returned to the work force, some rely on family members for support, and yet others will hope for government assistance.

This paper illustrates the deferred income annuity (DIA), a financial product that guarantees a future stream of income, much like a DBP, that serves to fill in this income gap. Essentially, DIAs offer the ability to lock in a guaranteed future income stream which can begin from 13 months up to 50 years in the future. Finally, using a single case study, three different retirement plans

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are compared. In the first example, a traditional retirement plan is compared to a traditional retirement plan that includes “longevity insurance.” In the second example, a traditional retirement plan is compared to a traditional retirement plan that includes “longevity insurance with a mortality hedge.” In the third example a traditional retirement plan is compared to a retirement plan that includes a “spend and replace” strategy.

DIAs are relatively new financial products and few companies offer them. Garth Bernard, President and Chief Operating Officer of Thrive® Income Distribution System, LLC, predicts that financial advisors will start to pay attention to DIAs once they understand what DIAs can offer and what they cannot.² This is the primary objective of this paper, to give the financial advisor an understanding of how to best use a DIA.

Issues

Individuals Becoming Responsible for Their Own Retirement Incomes

Terms like interest rates, market volatility, and diversification were of little concern to most people in the past, when investment risk was not a liability for the average investor but rather for an individual’s company. Before 1980 it was standard practice for most employers to provide DBPs for employees. However, beginning in 1980 and continuing through today there has been a paradigm shift in the world of retirement planning. The responsibility for managing retirement income has fallen on the shoulders of the employees, rather than the employers. The most common method of retirement savings has become 401(k) plans. Recent industry studies, such as Blackrock’s Annual Retirement Survey, show the decline of DBPs and emergence of defined-contribution plans (DCPs) as the new standard for creating retirement income.

Investment Risk

The trend of shifting responsibility for retirement planning from employers to individuals comes on the heels of one of the most volatile decades in the history of the financial markets. This volatility has caused a great amount of fear for many individuals approaching retirement, which has created the need for retirement income

security. In volatile markets, individuals nearing retirement or in the early stages of retirement are most susceptible to long-term implications of those adverse market conditions. This is due to having to plan for a long period of time following the market turbulence, while simultaneously needing the portfolio to produce income. If markets decline early on in retirement, the sustainability of the client’s desired lifestyle from his or her retirement savings is significantly reduced in the long term. This is what is known as “sequence of returns risk.” Many planners focus on the average return over a long time horizon without analyzing the peaks and valleys of a market-driven portfolio, which skews the sustainability of a portfolio. In order to make up for adverse market stretches, individuals have begun reaching for yield, taking on greater risk in their investment portfolios in an attempt to achieve higher returns on their capital, instead of trying to replace what formerly was a guaranteed portion of their retirement incomes. Many individuals became prognostic in thinking that the bull runs in the market had no end, but this can spell disaster in volatile market periods, as was seen in 2001 and 2008. In 2012, investors saw their portfolios rise and fall over the preceding 10 years and realized their account values were similar to what they were 10 years ago but they now had a shorter time period to plan their retirements. This has led to many retirees looking for ways to guarantee a portion of their retirement income so they do not fall victim to a cyclical market in the upcoming decade. In response to the need for more stable retirement income markets have produced innovative solutions, such as a DIA, to help clients rest assured that their incomes will last as long as they do.

Longevity Risk

When planning for retirement income, there are two distinct phases to consider: the time until life expectancy and the time past life expectancy. As discussed previously, longevity risk, or the risk that a person will live past his or her life expectancy, is very real. The most difficult component to hedging against longevity risk in retirement is that longevity is a moving target. In the financial planning and life insurance industry, much attention is focused on what is known as life expectancy, or the average age to which an individual of a certain age and given health

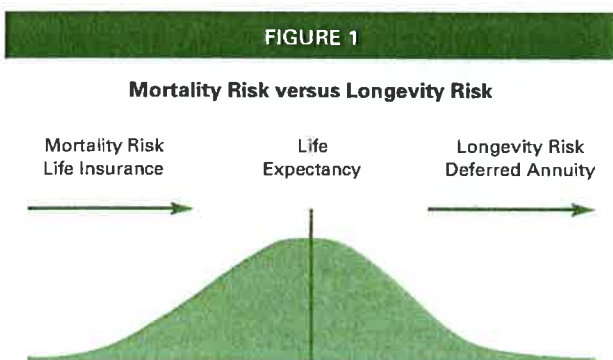
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condition is expected to live. Although life expectancy provides a benchmark for planning, it is only an expected value and very few individuals actually die at that definitive age (Figure 1). This is because life expectancy is simply an average of a sample; therefore some people will die before life expectancy, and some will die after. In other words, individuals who plan their retirements based on living to life expectancy have not addressed the significant risk of living past that date, which exposes them to the risk of outliving their assets. However, there are ways that individuals can hedge against both of these risks without increasing the risk within their portfolios. As discussed later, the solution which addresses longevity risk most efficiently is the DIA.

Outcome from Issues Identified

Retirees are now seeking guaranteed income streams in retirement for the duration of their lives. The Department of Labor has been working with insurance carriers to come up with a way for individuals to create their own personal pension plans when they retire and to hedge against longevity risk. Average individual investors have not demonstrated prudence with regard to their investments nor do they have the time or resources to pay close enough attention to their investment accounts in order to hedge against the significant risks they face in retirement. For these reasons, retirees are seeking ways to off-load the burden of making these crucial decisions to experts who can manage these risks for them.

In short, the issue is this: In a world where financial planning has become exceedingly complicated and is surrounded by uncertainty, how does a financial advisor provide the optimum retirement income plan for an individual?



Individuals are becoming responsible for their own retirement incomes as DCPs are replacing DBPs, individuals are living longer than life expectancy, and there is volatility in the financial markets. Add to this the rising costs of health care, interest rates at extreme lows, and the overall state of the economy. One possible solution is to obtain a leveraged, lifelong income stream provided by a DIA.

Deferred Income Annuities

According to Curtis V. Cloke, founder and Chairman of Thrive[®] Income Distribution System, LLC, a DIA is a cross between a single-premium immediate annuity and a single-premium deferred annuity.³ DIAs can be purchased when a client is relatively young and payment can be deferred out into the future. They allow an individual to reduce longevity risk by guaranteeing a pension-like stream of income for as long as he or she lives. DIAs are typically purchased through insurance companies with a lump-sum payment. Individuals then choose a specific start date for the income to begin (typically this must be longer than one to two years of deferral). DIAs work like most other annuities and have no underwriting qualifications (no medical exams, physicals, or review of medical history). The only restrictions on this contract are age limits (most carriers limit the age at which one can purchase an annuity to 80) and the client must be willing to lose all access to cash value in exchange for the future income stream.

Advantages

Higher Payouts

Because of the inherent risk that one could die before income actually begins, the payouts are typically very high and can offer a large amount of income leverage to hedge against longevity without requiring market exposure.⁴ This leverage comes from two factors: the amount of time deferred before income begins, and the use of mortality crediting by insurance companies, which is explained in more detail below. The payout could be as much as 30% more guaranteed income than most popular alternatives.⁵ This higher payout is a result of a longer duration of bond portfolios and interest compounding and greater exposure to mortality credits.⁶

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Flexibility

DIA's can help the financial advisor meet several different client needs. For those individuals still in the workforce, a DIA can help build a pension-like guaranteed income stream for the future.⁷ For individuals nearing retirement it can efficiently convert assets into future guaranteed streams of income.⁸ For an individual already in retirement, it can increase spending power by providing a guaranteed stream of income that would start at a predetermined advanced age, hedging the risk that he or she will live beyond life expectancy.⁹

Lower Cost

According to Money Lab, the cost of a DIA can be significantly different from the cost of an annuity in which the payout begins immediately upon signing a contract. For an immediate annuity to provide any benefit to the retiree, it would cost a 60-year-old man, in 2012, \$965,000 to purchase an annuity that would pay him \$5,000 a month. This same 60-year-old man could purchase a DIA that would pay \$5,000 monthly at age 85 for about \$78,000.¹⁰ Because DIA's require a lower upfront premium, they can provide more liquidity for the individual.¹¹

Tax Efficiency

In traditional annuities, the capital gains must be distributed before nontaxable principal; the DIA pays principal and gain in tandem.¹² For a more thorough discussion of the tax efficiencies of DIA's, please refer to the cited article.¹³

Disadvantages

Mortality Risk

A product like this contains some large inherent risks. Some would argue that a DIA would never be used if the individual were expected to pass away prior to life expectancy. If this were to occur, this investment to hedge against longevity risk would be considered a waste of capital. This is known as mortality risk, or the risk of passing away before life expectancy. The most efficient resource in order to hedge against this mortality risk is life insurance. For example, take an individual who is age 60 and purchases a deferred income annuity to begin payments at age 85. That individual has taken care of the

right side of the bell curve, or his or her longevity risk. In order to cover the left side, the mortality risk, it is suggested that the individual purchase either a guarantee to 85 or a guaranteed to life expectancy insurance vehicle. This combining of retirement income planning tools will allow the client to hedge both mortality and longevity risks while also creating less risk within the portfolio.

In response to the inherent mortality risk of the product, many insurance companies have come out with optional additions to the DIA to mitigate this risk. They offer options such as a return of premium before income payments, or the option to add a cash refund or period certain to the payments. These options are solutions to the posed disadvantages; however, they come at a high cost. The cost of adding one of these mortality hedges into the DIA contract comes as a severely reduced future income stream. This is why the authors believe using life insurance for the mortality risk side of the equation is the best option. As mentioned above, life insurance is made to hedge against mortality risk, so it is only natural that it be used for its intended purpose. By using both products, life insurance and a DIA, the individual has hedged both the mortality and longevity risks in the most efficient way possible. Of course the disadvantage of this option is simply the complexity that using multiple products can cause. The specifics of this risk-minimizing strategy will be addressed in a case study later in the paper.

Interest Rate Fluctuation

This can be viewed as both a potential advantage and disadvantage. In times of rising inflation, the payout will not go nearly as far as expected.¹⁴ The other disadvantage is that when an individual purchases the DIA, he or she is being locked in at the current interest rate the company is offering. In today's low-interest-rate world this could cause a serious issue, as the individual may not be receiving as much leveraging as he or she would if purchasing the DIA in the future.

Loss of Liquidity

Because the DIA is designed for the cost of the annuity to be paid in advance, a portion of the client's current savings must be allocated to pay this premium. There is a chance that the client's savings could be

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depleted prior to the payout start date. Many of the DIA products on the market have the flexibility to turn on the income stream prior to when anticipated; the flexibility of starting income earlier than previously determined helps to alleviate the risk that the remaining liquid portfolio could be depleted between a client's retirement start date and the date on which the annuity begins to pay income. It should be noted that turning on income prior to the scheduled withdrawal date will have an adverse effect on the anticipated income and change the overall structure of the plan design. Additionally, since the use of a deferred income annuity removes the asset from current use, a client needs to ensure the rest of his or her investment portfolio provides adequate liquidity in the event of unforeseen circumstances.

Mortality Crediting

Now that some of the advantages and disadvantages of the DIA have been addressed, our focus is shifted to how the product actually works. As mentioned previously, DIAs are efficient tools to hedge against longevity risk. This is because insurance companies use a strategy called mortality crediting. Mortality crediting involves pooling individuals together in order to create standardized risk among a high volume of exposure units. This principle is known as the "law of large numbers." The following simplified example illustrates how this strategy works conceptually.

Suppose a group of 100 fifty-year-olds collaborates and each drops \$100 in a jar, for a total of \$10,000. The money is invested for the next 15 years at a 5 percent rate of interest compounding annually. Based on life expectancy tables, statistically over the course of the 15 years, five of the individuals pass away, but their money stays in the pot, which has grown to roughly \$21,000. Now there are 95 individuals who have claim to the \$21,000 in the jar, or \$221 a person, for an individualized return of 5.46% over the time period. The growth can be separated into two components: investment return and mortality crediting. Mortality crediting is the added benefit that an individual receives based on the number of individuals still remaining in the pool of investors. First, as stated above, there is a rate of return of 5% on the money in the jar; the return above this amount is due to mortality crediting. In this case the group of 100 individuals was reduced to 95, so each remaining participant receives an additional .46% return. This concept is essential for the deferral stage.

Having discussed the accumulation value and how it is calculated, next consider the income stage of the DIA. At the end of the period, the \$221 per individual client is transferred into a lifetime income stream. The lifetime income stream is based on the same two components: return and mortality crediting. Life expectancy is based on statistics that show the hypothetical average age at death for those individuals. In this example, life expectancy for a group of 65-year-olds would be around 24 years, or to age 89. It is assumed that the return will remain the same at 5% with mortality crediting, with the average individual living 24 years. When solving for what the payment would be for an individual's lifetime based on the \$100 initial deposit, the grown value of \$221 is used with the anticipated 5% yield over a 24-year time horizon, which equates to \$16.02 per year. When age 100 is reached, the investment return and the internal rate of return (IRR) of the income flows are identical. If the individual survives past age 100, the DIA will provide further income payments which could result in an even higher IRR, while the traditional approach would simply be depleted. Once expectancy is passed, income is generated from the mortality crediting (Table 1).

Since the pool of individuals will statistically be smaller by waiting additional years to transition into the income

TABLE 1

Deferral and Income Stages of the DIA

TODAY—DEFERRAL—5% RETURN	
Initial Investment	\$100.00
Investors	100
Pool	\$10,000.00
Fifteen Years Investment	\$21,000.00
Investors Remaining	95
Individual Balance	\$221.05
Individualized Investment Return	5.46%
INCOME PHASE—5% RETURN	
Balance per Investor	\$221.00
Income Payout for Life	\$16.02
IRR at Life Expectancy	5.00%
IRR at Age 100	5.50%

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phase, an individual can gain more leveraging power by increasing the deferral period. This allows the investment to grow for a longer period of time and gain more mortality credits. In the distribution phase, the older the individual is, the shorter the time horizon until he or she reaches life expectancy and begins gaining mortality interest.

The DIA Market

Curtis Cloke, founder and Chairman of Thrive® Income Distribution System, LLC, anticipates an exponential growth in DIA sales over the next five to 10 years.¹⁵ Ross Goldstein, a corporate vice president for New York Life, says that sales of the company's DIAs reached \$500 million in less than a year after the product's launch,¹⁶ and in just 18 months sales have grown to more than \$1 billion.¹⁷ DIAs were a major area of growth in 2012 and will continue to be in 2013.¹⁸

The case study below expands on the specifics of this risk-minimizing strategy.

Case Study

As explained above, an individual's leveraging grows exponentially the longer he or she defers inside a DIA. A powerful strategy is taking these private pensions and positioning them as longevity insurance to reduce the risk within an investment portfolio and in turn increase the sustainability of an individual's retirement.

Example 1: Deferred Income Annuities as Longevity Insurance

A 50-year-old male with \$2,000,000 of assets is looking to replace \$100,000 gross income inflation-adjusted at 3% in retirement starting at age 65. Between now (age 50) and retirement (age 65) he plans to save no additional funds. He is extremely risk averse and wants the safest portfolio possible which will produce his retirement income until he reaches age 100. A traditional approach with no longevity insurance would be to align a conservative portfolio to generate the type of return needed to systematically withdraw the \$100,000 of inflation-adjusted income every year in retirement. In this scenario the individual would have to seek a strategy that returns 4.94% to be able to sustain his or her retirement goal without depleting his or her portfolio in retirement (Table 2). The alter-

TABLE 2

Case Study, Example 1: Traditional Portfolio with and without Longevity Insurance

	TRADITIONAL PORTFOLIO		TRADITIONAL PORTFOLIO WITH LONGEVITY INSURANCE			
	4.940%		4.212%	6.57%		
50	\$	(2,000,000.00)	\$	(1,685,561.38)	\$	(314,438.62)
51	\$	-	\$	-	\$	-
52	\$	-	\$	-	\$	-
53	\$	-	\$	-	\$	-
54	\$	-	\$	-	\$	-
55	\$	-	\$	-	\$	-
56	\$	-	\$	-	\$	-
57	\$	-	\$	-	\$	-
58	\$	-	\$	-	\$	-
59	\$	-	\$	-	\$	-
60	\$	-	\$	-	\$	-
61	\$	-	\$	-	\$	-
62	\$	-	\$	-	\$	-
63	\$	-	\$	-	\$	-
64	\$	-	\$	-	\$	-
65	\$	155,796.74	\$	155,796.74	\$	-
66	\$	160,470.64	\$	160,470.64	\$	-
67	\$	165,284.76	\$	165,284.76	\$	-
68	\$	170,243.31	\$	170,243.31	\$	-
69	\$	175,350.61	\$	175,350.61	\$	-
70	\$	180,611.12	\$	180,611.12	\$	-
71	\$	186,029.46	\$	186,029.46	\$	-
72	\$	191,610.34	\$	191,610.34	\$	-
73	\$	197,358.65	\$	197,358.65	\$	-
74	\$	203,279.41	\$	203,279.41	\$	-
75	\$	209,377.79	\$	209,377.79	\$	-
76	\$	215,659.13	\$	215,659.13	\$	-
77	\$	222,128.90	\$	222,128.90	\$	-
78	\$	228,792.77	\$	228,792.77	\$	-
79	\$	235,656.55	\$	235,656.55	\$	-
80	\$	242,726.25	\$	242,726.25	\$	-
81	\$	250,008.03	\$	250,008.03	\$	-
82	\$	257,508.28	\$	257,508.28	\$	-
83	\$	265,233.52	\$	265,233.52	\$	-
84	\$	273,190.53	\$	273,190.53	\$	-
85	\$	281,386.25	\$	0.00	\$	281,386.25
86	\$	289,827.83	\$	8,441.58	\$	281,386.25
87	\$	298,522.67	\$	17,136.42	\$	281,386.25
88	\$	307,478.35	\$	26,092.10	\$	281,386.25
89	\$	316,702.70	\$	35,316.45	\$	281,386.25
90	\$	326,203.78	\$	44,817.53	\$	281,386.25
91	\$	335,989.89	\$	54,603.64	\$	281,386.25
92	\$	346,069.59	\$	64,683.34	\$	281,386.25
93	\$	356,451.68	\$	75,065.43	\$	281,386.25
94	\$	367,145.23	\$	85,758.98	\$	281,386.25
95	\$	378,159.58	\$	96,772.33	\$	281,387.25
96	\$	389,504.37	\$	108,116.12	\$	281,388.25
97	\$	401,189.50	\$	119,800.25	\$	281,389.25
98	\$	413,225.19	\$	131,834.94	\$	281,390.25
99	\$	425,621.94	\$	144,230.69	\$	281,391.25
100	\$	438,390.60	\$	156,998.35	\$	281,392.25

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native would be to use a deferred income annuity and leverage to hedge against longevity risk and conservatively invest the remainder of the funds to generate the outstanding income needed from the portfolio. In this example 15.72% was carved out of the portfolio to generate 100% of income need at age 85, or \$281,386.25 (\$100,000 with 35 years of inflation at 3%). By doing so the return needed from the traditional portfolio was reduced by nearly 15%, or to 4.212% from 4.94%.

Because a conservative investor will not need to seek aggressive investment returns, he or she can utilize the power of mortality crediting and in turn reduce the risk exposure. There is the risk, however, that life expectancy could change over the life of the contract and hence, mortality credit may be substantially reduced.

Example 2: Longevity Insurance with Mortality Hedge

Some clients may be concerned that they will die before the benefit age of 85. For individuals with this mindset, insurance coverage for mortality risk, or the chance of dying at a young age, can be provided. For the same individual mentioned earlier (50-year-old male), to hedge both sides of the longevity equation insurance could be purchased at \$2,150 a year. This would return the premium payment for the guaranteed income annuity as a tax-free life insurance benefit to heirs in the event he dies before the income annuity commences at age 85. This benefit, \$314,438, is the amount of premium needed to replace the deferred income annuity. In this example the traditional portfolio would need to generate 4.308%, as opposed to 4.212% without the “reverse longevity” hedge, a difference of 2.2% or .096% return (Table 3). Even with this strategy, the longevity insurance hybrid requires 12.8% less return than the traditional approach, or .632% less (4.94% - 4.308%).

Example 3: Spend & Replace Strategy

The third strategy is to use the longevity insurance to reduce the needed return from the client’s portfolio in order to free up cash flow to provide a legacy for heirs. This concept maintains the required return from the traditional portfolio and uses the leverage generated from the deferred income annuity to purchase insurance ben-

efits for the heirs. In this solution \$331,401 is deposited into the deferred income annuity, which generates the income need at age 85, \$296,566 (Table 4). This leverage frees up an additional \$15,180 of cash flow to fund an all-pay life insurance policy which generates \$1,550,000 of death benefit for heirs while requiring the same amount of return in the traditional asset management portfolio. The asset management portfolio in our traditional strategy is designed to be at a \$0 account balance at age 100, as is the one in the hybrid portfolio. The difference is the hybrid portfolio is designed to provide a \$1,550,000 death benefit to heirs on death, and still will only demand the same return on asset management accounts as the situation that leaves the client with \$0 upon death.

Summary of Findings

Moshe Milevsky has written multiple articles on the concept of “ruin minimization.”¹⁹ This is a concept of predicting the probability of retirement ruin based on various attributes of a client’s retirement plan. A few of these attributes include remaining life span, spending rate, average return, and standard deviation.²⁰ Based on these data inputs the gamma distribution (probability density) of a client’s expected portfolio can be extrapolated. The strategies listed above all incorporate the use of a DIA in order to decrease the probability of ruin by reducing the average lifespan for planning by setting an end date on retirement, and by relieving some of the pressure on the investment portfolio by decreasing the required return as well as the risk (as measured by standard deviation). Through these case studies it was demonstrated that a DIA is one of the most efficient products to address this ever-increasing longevity risk.

Conclusion

Longevity can be both a blessing and a curse. In a retirement income planning scenario it is typically thought to be the latter. In the past, individuals had the safety of a guaranteed pension to last them throughout their retirement days; however, today those pensions have all but disappeared. Individuals are now responsible for their own retirement incomes, and for saving up enough assets to last through their lifetimes. The risk of outliving one’s assets is

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TABLE 3

Case Study, Example 2: Traditional Portfolio with and without Mortality Risk Hedge

TRADITIONAL PORTFOLIO		TRADITIONAL PORTFOLIO WITH LONGEVITY INSURANCE		
		TRADITIONAL PORTFOLIO	DEFERRED INCOME ANNUITY	INSURANCE PREMIUMS
	4.940%	4.308%	6.57%	DB - \$315,000
50	\$(2,000,000.00)	\$(1,683,411.38)	\$ (314,438.62)	\$ 2,150.00
51	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
52	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
53	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
54	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
55	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
56	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
57	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
58	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
59	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
60	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
61	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
62	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
63	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
64	\$ -	\$ 2,150.00	\$ -	\$ 2,150.00
65	\$ 155,796.74	\$ 157,946.74	\$ -	\$ 2,150.00
66	\$ 160,470.64	\$ 162,620.64	\$ -	\$ 2,150.00
67	\$ 165,284.76	\$ 167,434.76	\$ -	\$ 2,150.00
68	\$ 170,243.31	\$ 172,393.31	\$ -	\$ 2,150.00
69	\$ 175,350.61	\$ 177,500.61	\$ -	\$ 2,150.00
70	\$ 180,611.12	\$ 182,761.12	\$ -	\$ 2,150.00
71	\$ 186,029.46	\$ 188,179.46	\$ -	\$ 2,150.00
72	\$ 191,610.34	\$ 193,760.34	\$ -	\$ 2,150.00
73	\$ 197,358.65	\$ 199,508.65	\$ -	\$ 2,150.00
74	\$ 203,279.41	\$ 205,429.41	\$ -	\$ 2,150.00
75	\$ 209,377.79	\$ 211,527.79	\$ -	\$ 2,150.00
76	\$ 215,659.13	\$ 217,809.13	\$ -	\$ 2,150.00
77	\$ 222,128.90	\$ 224,278.90	\$ -	\$ 2,150.00
78	\$ 228,792.77	\$ 230,942.77	\$ -	\$ 2,150.00
79	\$ 235,656.55	\$ 237,806.55	\$ -	\$ 2,150.00
80	\$ 242,726.25	\$ 244,876.25	\$ -	\$ 2,150.00
81	\$ 250,008.03	\$ 252,158.03	\$ -	\$ 2,150.00
82	\$ 257,508.28	\$ 259,658.28	\$ -	\$ 2,150.00
83	\$ 265,233.52	\$ 267,383.52	\$ -	\$ 2,150.00
84	\$ 273,190.53	\$ 275,340.53	\$ -	\$ 2,150.00
85	\$ 281,386.25	\$ (0.00)	\$ 281,386.25	\$ -
86	\$ 289,827.83	\$ 8,441.58	\$ 281,386.25	\$ -
87	\$ 298,522.67	\$ 17,136.42	\$ 281,386.25	\$ -
88	\$ 307,478.35	\$ 26,092.10	\$ 281,386.25	\$ -
89	\$ 316,702.70	\$ 35,316.45	\$ 281,386.25	\$ -
90	\$ 326,203.78	\$ 44,817.53	\$ 281,386.25	\$ -
91	\$ 335,989.89	\$ 54,603.64	\$ 281,386.25	\$ -
92	\$ 346,069.59	\$ 64,683.34	\$ 281,386.25	\$ -
93	\$ 356,451.68	\$ 75,065.43	\$ 281,386.25	\$ -
94	\$ 367,145.23	\$ 85,758.98	\$ 281,386.25	\$ -
95	\$ 378,159.58	\$ 96,772.33	\$ 281,387.25	\$ -
96	\$ 389,504.37	\$ 108,116.12	\$ 281,388.25	\$ -
97	\$ 401,189.50	\$ 119,800.25	\$ 281,389.25	\$ -
98	\$ 413,225.19	\$ 131,834.94	\$ 281,390.25	\$ -
99	\$ 425,621.94	\$ 144,230.69	\$ 281,391.25	\$ -
100	\$ 438,390.60	\$ 156,998.35	\$ 281,392.25	\$ -

**Deferred Income Annuities:
Reducing Longevity Risk in Retirement Planning**

TABLE 4

Case Study, Example 3: Traditional Portfolio with and without Spend and Replace Strategy

TRADITIONAL PORTFOLIO		TRADITIONAL PORTFOLIO WITH LONGEVITY INSURANCE		
		TRADITIONAL PORTFOLIO	DEFERRED INCOME ANNUITY	INSURANCE PREMIUMS
	4.940%	4.940%	6.57%	DB - \$1,550,000
50	\$ (2,000,000.00)	\$ (1,653,418.30)	\$ (331,401.70)	\$ 15,180.00
51	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
52	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
53	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
54	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
55	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
56	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
57	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
58	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
59	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
60	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
61	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
62	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
63	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
64	\$ -	\$ 15,180.00	\$ -	\$ 15,180.00
65	\$ 155,796.74	\$ 170,976.74	\$ -	\$ 15,180.00
66	\$ 160,470.64	\$ 175,650.64	\$ -	\$ 15,180.00
67	\$ 165,284.76	\$ 180,464.76	\$ -	\$ 15,180.00
68	\$ 170,243.31	\$ 185,423.31	\$ -	\$ 15,180.00
69	\$ 175,350.61	\$ 190,530.61	\$ -	\$ 15,180.00
70	\$ 180,611.12	\$ 195,791.12	\$ -	\$ 15,180.00
71	\$ 186,029.46	\$ 201,209.46	\$ -	\$ 15,180.00
72	\$ 191,610.34	\$ 206,790.34	\$ -	\$ 15,180.00
73	\$ 197,358.65	\$ 212,538.65	\$ -	\$ 15,180.00
74	\$ 203,279.41	\$ 218,459.41	\$ -	\$ 15,180.00
75	\$ 209,377.79	\$ 224,557.79	\$ -	\$ 15,180.00
76	\$ 215,659.13	\$ 230,839.13	\$ -	\$ 15,180.00
77	\$ 222,128.90	\$ 237,308.90	\$ -	\$ 15,180.00
78	\$ 228,792.77	\$ 243,972.77	\$ -	\$ 15,180.00
79	\$ 235,656.55	\$ 250,836.55	\$ -	\$ 15,180.00
80	\$ 242,726.25	\$ 257,906.25	\$ -	\$ 15,180.00
81	\$ 250,008.03	\$ 265,188.03	\$ -	\$ 15,180.00
82	\$ 257,508.28	\$ 272,688.28	\$ -	\$ 15,180.00
83	\$ 265,233.52	\$ 280,413.52	\$ -	\$ 15,180.00
84	\$ 273,190.53	\$ 288,370.53	\$ -	\$ 15,180.00
85	\$ 281,386.25	\$ -	\$ 296,566.25	\$ 15,180.00
86	\$ 289,827.83	\$ 8,441.59	\$ 296,566.25	\$ 15,180.00
87	\$ 298,522.67	\$ 17,136.42	\$ 296,566.25	\$ 15,180.00
88	\$ 307,478.35	\$ 26,092.10	\$ 296,566.25	\$ 15,180.00
89	\$ 316,702.70	\$ 35,316.45	\$ 296,566.25	\$ 15,180.00
90	\$ 326,203.78	\$ 44,817.53	\$ 296,566.25	\$ 15,180.00
91	\$ 335,989.89	\$ 54,603.65	\$ 296,566.25	\$ 15,180.00
92	\$ 346,069.59	\$ 64,683.34	\$ 296,566.25	\$ 15,180.00
93	\$ 356,451.68	\$ 75,065.43	\$ 296,566.25	\$ 15,180.00
94	\$ 367,145.23	\$ 85,758.98	\$ 296,566.25	\$ 15,180.00
95	\$ 378,159.58	\$ 96,773.34	\$ 296,566.25	\$ 15,180.00
96	\$ 389,504.37	\$ 108,118.13	\$ 296,566.25	\$ 15,180.00
97	\$ 401,189.50	\$ 119,803.26	\$ 296,566.25	\$ 15,180.00
98	\$ 413,225.19	\$ 131,838.94	\$ 296,566.25	\$ 15,180.00
99	\$ 425,621.94	\$ 144,235.70	\$ 296,566.25	\$ 15,180.00
100	\$ 438,390.60	\$ 157,004.36	\$ 296,566.25	\$ 15,180.00

Deferred Income Annuities: Reducing Longevity Risk in Retirement Planning

one of the most difficult risks to combat because the end date is a moving target. In order to help combat this increasing risk there is a product, a DIA, which can allow an individual to artificially set an end date to retirement. This then allows the individual to focus on a date in the future when he or she will have a "personal pension" that will take over providing his or her income needs.

These DIAs can also provide more than just income replacement. Setting aside a portion of assets to purchase a DIA can allow a client to require a smaller rate of return from other asset management accounts in order to make his or her money last throughout his or her lifetime. Because of this the client can take less risk in his or her portfolio, which could help guard against large negative return years such as 2008. An individual can also purchase a term life insurance policy, in addition to a DIA, as a mortality hedge. This would allow the individual to be protected for the first half of the bell curve, or the time until the deferred annuity begins payments. In addition, the client is still able to require a lower return on the asset management portfolio than if neither instrument had been purchased. Finally, a DIA can allow for use of excess cash earlier in retirement to purchase a permanent life insurance policy. The guaranteed income stream from a DIA allows the individual to require the same amount of return on this hybrid strategy as was needed on the asset management portfolio when there was no longevity or mortality protection.

A DIA is a very flexible instrument and can be placed in many different situations to help provide clients with an answer to one of the most difficult risks they will face. Longevity does not have to be viewed as a curse. If the correct steps are taken, and guaranteed income streams are correctly utilized, longevity can be something to strive for instead of fear. ■

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