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Protected Lifetime Income Benefits: The Future of Longevity Protection

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Protected Lifetime Income Benefits

THE FUTURE OF LONGEVITY PROTECTION

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More solutions are being created to help retirees address longevity risk. For example, one strategy provides lifetime income with a benefit amount that evolves throughout retirement based entirely on account performance. We refer to this strategy as a "protected lifetime income benefit" or PLIB.

This article contrasts the efficacy of a PLIB against three other common types of annuities:

- a single premium immediate annuity or SPIA,
- a deferred income annuity or DIA,
- and a variable annuity (VA) with a guaranteed lifetime withdrawal benefit or GLWB focused on economic value.

Overall, we find that the PLIB structure on average tends to generate the most income for a retiree, especially compared to GLWBs, which generate the lowest income levels.

Although PLIBs have higher levels of income variability, this variability needs to be placed in context, because almost all retirees have existing guaranteed lifetime income sources such as Social Security benefits.

This research suggests that PLIB strategies are an exciting evolution in the longevity income space and that they should be considered by financial advisors and retirees when creating efficient retirement-income plans.

ACHIEVING RETIREMENT SUCCESS

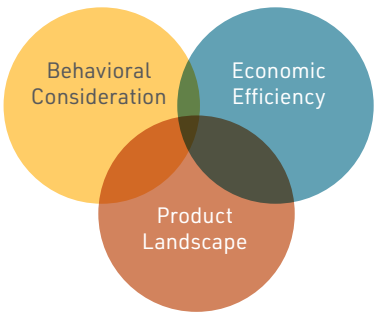
Risk exists in a variety of forms and has a variety of definitions, depending on context. For example, risk for a retiree generally is defined as not accomplishing some desired spending level for life. Because traditional portfolios do not explicitly provide longevity protection, retirees who require or desire additional lifetime income protection should consider allocating savings to annuities.

Despite decades of research extolling the potential benefits of allocating to annuities, most Americans annuitize relatively little of their wealth (Benartzi et al. 2011). Modigliani (1986) called Americans' avoidance of annuities "the annuitization puzzle." And the lack of a transition from accumulation to decumulation is a primary deficiency of the defined contribution (DC) system compared to the traditional defined benefit pension (Bodie et al. 1987).

Research on the benefits of annuitization and its optimal strategies focuses on the economic benefits of different possible outcomes, and generally ignores retirees' preferences and the actual product landscape. But each of these domains must be considered when determining the optimal strategy for a retiree, an effect illustrated in figure 1.

The true efficacy of each annuity type is likely to vary across domains. For example, DIAs often are described as the most economically efficient type of annuity; but given their targeted hedge against longevity risk, they are unpopular due to numerous behavioral and product barriers.[1] From a behavioral perspective, DIAs require the annuitant to permanently cede the premium to the insurance company, i.e., DIAs are irrevocable, which is especially unpopular, and payments do not begin until some later age. All this leads many retirees to view DIAs as a risky trade. There also are a variety of important product implications. For example, the economic value of DIAs historically has declined for longer delay periods with notable variation in payouts across insurers (Blanchett and Nikolic 2022).

Figure 1 **THE OPTIMAL ANNUITY**



Therefore, it is important to place the benefits of each strategy in the context of each retiree's unique situation and preferences to ensure selection of an appropriate strategy.

INTRODUCING PLIBS

Annuities that offer a GLWB feature, also sometimes referred to as a guaranteed minimum withdrawal benefit or GMWB, provide ongoing access to the

premium, i.e., they are revocable. They also provide guaranteed lifetime income, even if the underlying account value goes to zero. GLWBs are available with a variety of annuity types, primarily VAs and fixed indexed annuities (FIAs). They also are available in registered index-linked annuities (RILAs) and could be offered with more-traditional portfolios as a contingent deferred annuity (CDA).

Annuity products that offer a protected lifetime income benefit, or PLIB, are growing in number in response to the challenging economics associated with issuing variable annuities, especially ones with GLWBs. With a PLIB, the lifetime income amount evolves throughout retirement entirely depending on the returns of the underlying portfolio. PLIBs are similar to GLWBs, but GLWBs provide a defined minimum guaranteed income floor, whereas the income generated from a PLIB can decline, perhaps significantly, based on the performance of the account.

One of the oldest longevity products that falls under the PLIB umbrella is a tontine. Tontines were devised in the 17th century to allow owners (also called subscribers, shareholders, investors, etc., depending on the structure) to share in the investment and mortality experience of the pool, with income payments adjusted accordingly among the survivors over time. For our analysis, we assume the income generated from the PLIB varies solely depending on account performance, which implies the backing of an insurance company. In reality, however, it would be possible to create products where the income varies depending on investment experience alone, mortality experience alone, or both. There is some question about whether tontines (with both shared investment and mortality experience) can be legally offered in the United States, and as such no products currently exist.

Payouts from PLIBs are similar to GLWBs, in that PLIBs provide some level of income for life regardless of the underlying account value, i.e., even if it goes to zero. The key difference is that the income generated from PLIBs is based entirely on the performance of the account, and the income from a GLWB is based on adjustments to the benefit base. For the income level from a GLWB to increase during the distribution phase, the return of the contract typically must exceed both the distribution amount and total fees, i.e., achieve a new high-water mark, a feat that becomes increasingly unlikely as the annuitant moves through retirement.

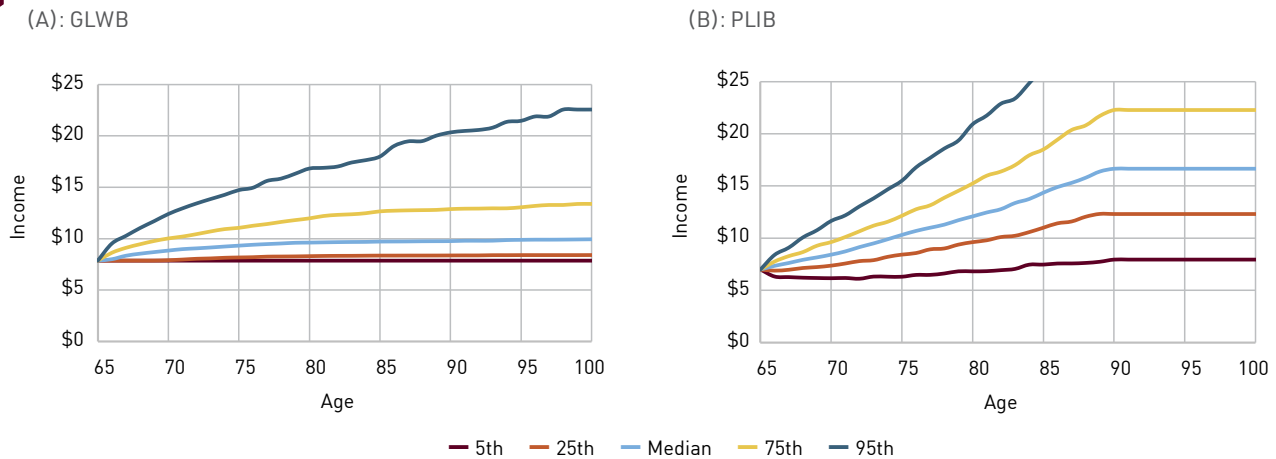
The income from a PLIB will change during retirement based on the credited return minus any applicable fees. A PLIB may have an assumed interest rate (AIR), which also serves as an effective hurdle rate for future income changes; we assume an AIR of 0 percent for this analysis. For example, if the current income from a PLIB is $5,000 and the net return of the account (including fees) for the prior period was +20 percent, the income level would increase by 20 percent to $6,000. In this case the income would increase regardless of the underlying value of the contract, i.e., there is no requirement to achieve a new high-water mark such as for a GLWB.

Figure 2 shows distribution of income from a GLWB and from a PLIB based on the key assumptions outlined in the following section. The GLWB is assumed to have a 60-percent equity allocation (the maximum possible), and the PLIB is assumed to have a 40-percent equity allocation, which is more conservative to balance the risk associated with portfolio declines and the subsequent reduction in lifetime income.

The income distribution for the GLWB clearly appears to be tighter than for the PLIB. Although there are a few scenarios where the income level increases considerably for the GLWB, for those scenarios the increase in income tends to be relatively small, and the probability of an increase decreases as the annuitant moves through retirement. In contrast, the income levels from the PLIB increasingly diverge over time reflecting the cumulative returns and volatility of the

Figure 2

DISTRIBUTION OF INCOME THROUGHOUT RETIREMENT



portfolio throughout retirement. Positive returns generally benefit the PLIB more than the GLWB, because the PLIB income level is based entirely on the credited return rather than the GLWB's new high-water mark. Again, the PLIB income is assumed to remain constant after the portfolio's value is exhausted, which is why the PLIB income distribution flattens at older ages.

ANALYSIS

The analysis focuses on a scenario with a 65-year-old retiree with a balance of $500,000 and an annual portfolio fee of 0.5 percent. The annual total retirement income goal is $60,000, which is adjusted for inflation in each specific trial.

Five different strategies are considered, four of which include an allocation to an annuity. The annuity strategies are generic high-quality institutional products available today, i.e., they are not purely hypothetical. The annuity allocations are 50 percent for the SPIA, GLWB, and PLIB; and 20 percent for the DIA. We use relatively high allocations to amplify the differences of the respective strategies.

The five strategies considered are:

1. No annuity.
2. A SPIA purchased at retirement with a cash refund provision and income commencing immediately. A model determines the payout rate for each trial based on the prevailing bond yield at retirement. The payout at age 65 is 6.51 percent.
3. A DIA purchased at age 65 with income commencing at age 80. A model is used to estimate the payout rate for each trial and assumes a cash refund provision. The payout for the assumed immediate retirement scenario is 21.67 percent.
4. A GLWB with a 5-percent payout rate based on the greater of the contract value or the initial balance at retirement, assuming 60-percent equity allocation, 1.25-percent annual fee applied to the contract value, and annual step-ups.
5. A PLIB invested 40-percent in equities, with a 1.25-percent annual fee applied to the contract value and a 4.5-percent initial payout at age 65. Purchase is assumed to occur at retirement.

Two key variables are treated as random, i.e., stochastic, for this analysis: (1) returns and (2) mortality, which drives the length of retirement. The Monte Carlo simulation includes 5,000 trials.

Returns are based on an econometric model to simulate future changes in bond yields, which dictate future bond returns and thus the payout rates for annuities. This type of model is important versus assuming purely random bond returns, i.e., where they are independent and identically distributed, without explicitly incorporating yields. This is important because the returns on bonds and the payouts for annuities—especially SPIAs and DIAs—are going to be related. If interest rates increase, the returns on bonds are likely to be negative, but this would be accompanied by a lower cost for a given level of income, i.e., annuity payouts would increase.

The model targets a 3.5-percent constant aggregate bond yield, where the individual trial bond yields can evolve over time but are bounded by 0–8 percent.

ACRONYM GLOSSARY

CDA	Contingent Deferred Annuity
DIA	Deferred Income Annuity
FIA	Fixed Indexed Annuity
GLWB	Guaranteed Lifetime Withdrawal Benefit
GMWB	Guaranteed Minimum Withdrawal Benefit
PLIB	Protected Lifetime Income Benefit
RILA	Registered Index-Linked Annuity
SPIA	Single Premium Immediate Annuity
VA	Variable Annuity

The average resulting bond return using our model is approximately 3.5 percent with a 7.0-percent annual volatility. The return for stocks is 8.5 percent and the inflation rate is 2.5 percent, with standard deviations of 18.0 percent and 1.0 percent, respectively. The implied correlation among the asset classes is zero. Equity allocations for the portfolio are assumed to evolve based on the PGIM Day One target-date series.

Taxes are ignored for the analysis, which effectively assumes that all savings are in qualified monies, e.g., individual retirement accounts.

Mortality rates for the analysis assume the retiree is healthier than the average American but not necessarily as healthy as the average annuitant. Specifically, we use mortality rates based on the Social Security Administration 2019 Period Life Table[2] with improvement factors based on the Society of Actuaries 2012 Immediate Annuity Table.[3] We also apply a 30-percent mortality load or reduction to reflect mortality expectations of individuals participating in a DC plan, who are those most likely to have accumulated wealth for retirement. The length of retirement varies by trial and is assumed to last between one and 50 years.

For each trial, we estimate the net present value of all income payments as well as the residual value of the portfolio at death, i.e., at the end of the final retirement year. A 2-percent real discount rate is used for income net present value calculations and a 4-percent real discount rate is used for the balance at death.

RESULTS

We compared the results of the four annuity allocations using the portfolio-only strategy as a benchmark for the efficacy of each strategy.

We focus on either the mortality-weighted net present value of income alone or income plus residual wealth, i.e., wealth at death, which we refer to as

the total economic value. The income-only results would be consistent with a retiree who focused entirely on maximizing retirement income and has no bequest motive. The income plus residual wealth is consistent with a retiree who is concerned about maximizing both lifetime income and bequests. Most retirees will fall between these two extremes. Therefore, each of the annuity strategies assumes some type of residual benefit upon death, i.e., none are life only. The distribution of net present values, compared to the portfolio-only results for the respective trial, is shown in figure 3.

Figure 3 shows that, when focused on the complete distribution of trials, the PLIB appears to generate the highest levels of income (A) as well as the highest total economic value (B). The GLWB generates the lowest income levels, but it does considerably better when the focus is on the total economic value. The SPIA and DIA strategies are both relatively average.

Next, we explore how the annuities perform in different return environments and different retirement periods. For this comparison we first group each of the 5,000 trials into 10 separate groups based on the average geometric return of the non-annuity portfolio during the first 10 years of each trial. This captures sequence risk as well as the overall length of retirement in years. This approach provides context for possible efficacy in different retirement scenarios. The results are shown in figure 4.

When focusing on portfolio returns and income, the SPIA does the best when returns are low, because its income is effectively fixed, so the strategy is the least affected by returns.

Figure 4(A) shows that, when focusing on portfolio returns and income, the SPIA does the best when returns are low, because its income is effectively fixed, so the strategy is the least affected by returns. As returns improve, the PLIB starts to improve, and the DIA and GLWB strategies both perform well.

When focusing on retirement length and income (B), the metrics are identical among the strategies for the shortest retirement periods because portfolios are rarely depleted, i.e., the income goal generally is always met. As the length of retirement increases, the differences in net present value widen, and PLIBs appear to generate the most income and GLWBs the least.

When focusing on returns and total economic value (C), the differences across strategies tighten somewhat, though the efficacy of the SPIA varies considerably based on the return environment. Again, because SPIAs provide a fixed payment that is unaffected by market returns, they do the best in the lower return environment, but they do the worst in the higher return scenarios.

The PLIB strategy effectively dominates the other three approaches when focusing on the total economic value by retirement length (D).

Although this analysis doesn't necessarily point to a single strategy being the best, it does suggest the PLIB approach is attractive across a variety of dimensions.

THE MARGINAL ROLE OF THE PORTFOLIO FUNDING RETIREMENT

One concern with a PLIB strategy is its income variability during retirement. Positive returns can increase the income benefit, perhaps considerably, but negative returns can have the opposite effect. Therefore, it is important to ensure that the portfolio itself is diversified, i.e., not overly risky.

Figure 3

DISTRIBUTION OF NET PRESENT VALUES

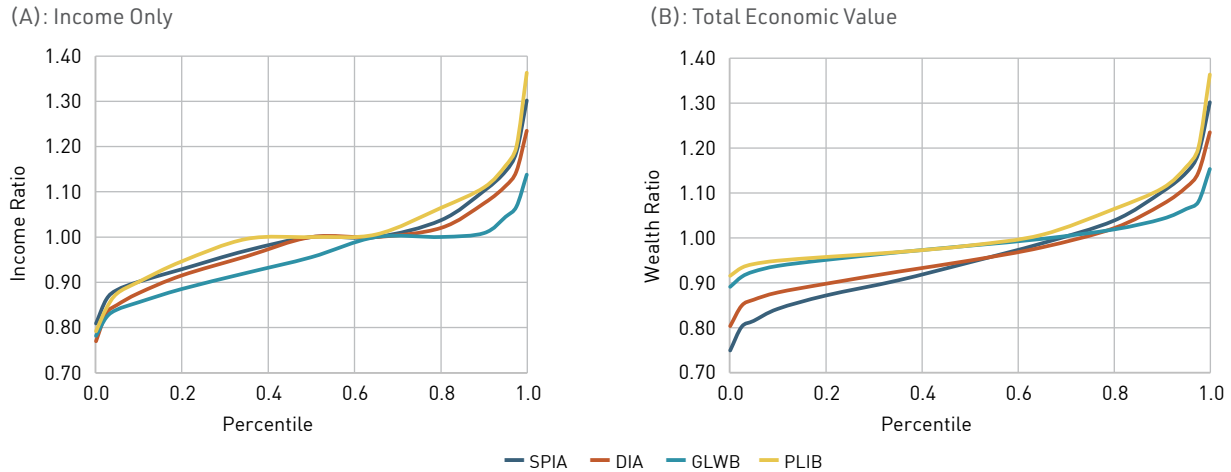
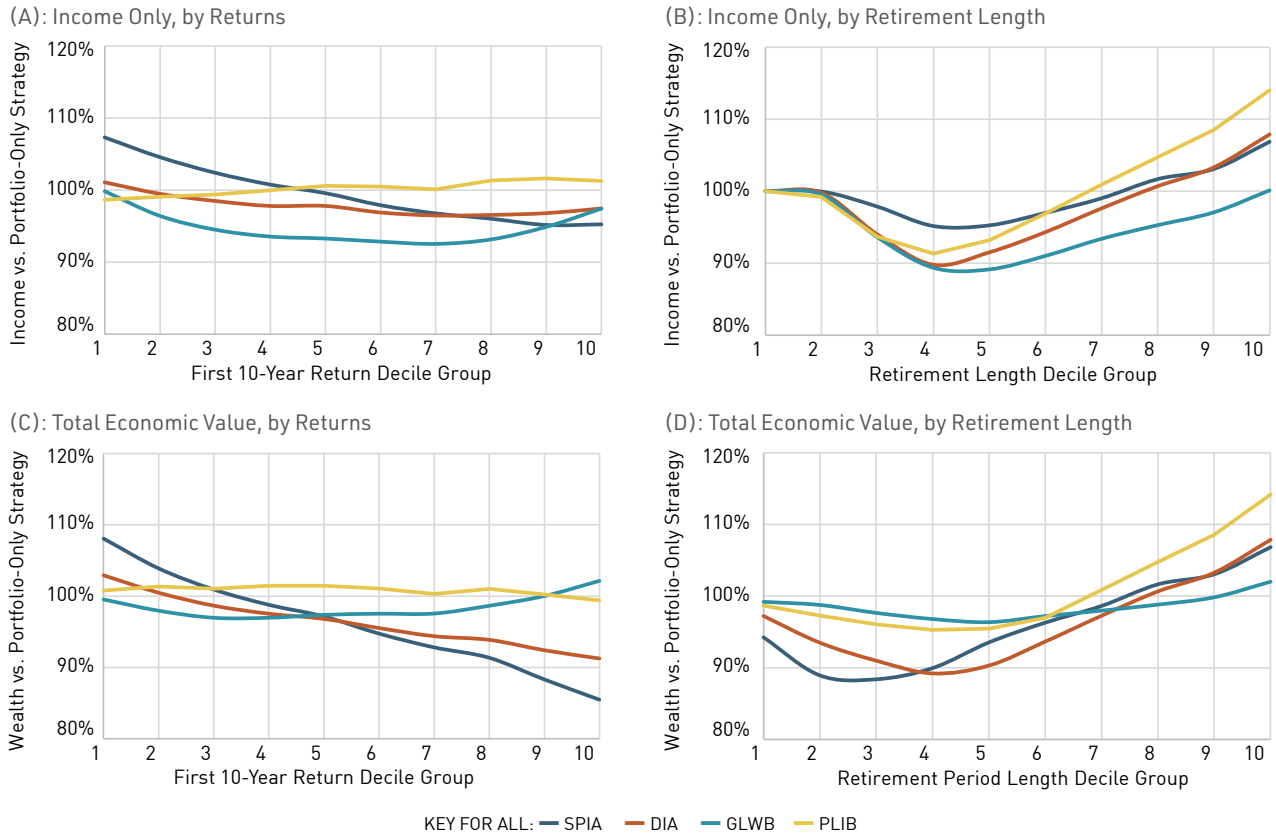


Figure 4

NET PRESENT VALUE FOR DIFFERENT RETIREMENT AND RETIREMENT LENGTH ENVIRONMENTS

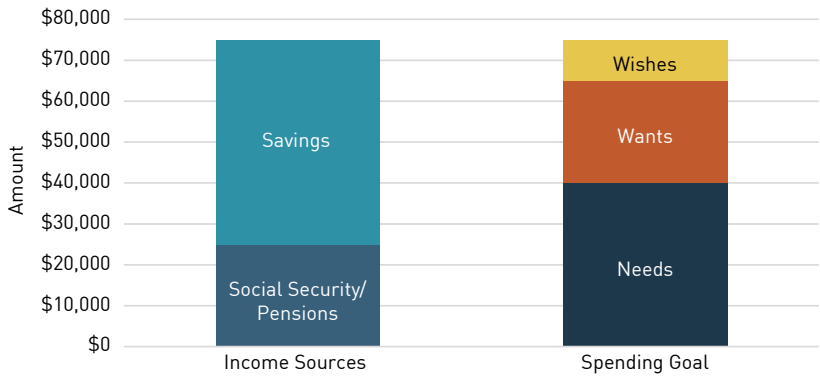


It's also important to think about the marginal role of the portfolio when it comes to funding the retirement liability. Most retirees have some fixed and guaranteed lifetime income, most commonly Social Security retirement benefits. Therefore, the income generated from the portfolio doesn't necessarily need to be as secure.

Additionally, although the retirement-income goal typically is modeled as a single fixed amount in financial plans, in reality each retiree likely has some level of flexibility or elasticity associated with the income goal. Figure 5 illustrates this effect for a hypothetical household and suggests that retirees can and should accept a higher level of income variability for savings used to purchase an annuity.

Figure 5

DECOMPOSING RETIREMENT ASSETS AND THE RETIREMENT LIABILITY



CONCLUSIONS

The annuity puzzle—i.e., Americans' aversion to annuities—is still alive and well. But a new lifetime income strategy called a protected lifetime income benefit, or PLIB, is gaining traction.

PLIBs are structurally similar to guaranteed lifetime withdrawal benefits or GLWBs, but there are notable differences in how the income can evolve during retirement. This research suggests that the increased risk-sharing approach of PLIBs can benefit retirees, especially those who are more comfortable with higher levels of income variability.

PLIBs can overlay more traditional portfolios, e.g., as a contingent deferred annuity or a CDA. They might be offered within an annuity, perhaps

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layered onto a variable annuity or a fixed income annuity. They can even be used as a tontine-like option. Given this flexibility combined with income potential, we expect PLIB strategies to become increasingly popular in the future.

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ENDNOTES

1. For example, DIA sales represented only about $2 billion of the $255 billion in total annuity sales in 2021, according to LIMRA. See https://www.limra.com/en/newsroom/news-releases/2022/secure-retirement-institute-total-annuity-sales-jump-16-in-2021--marking-highest-sales-since-2008/.
2. See https://www.ssa.gov/oact/STATS/table4c6.html.
3. See https://www.soa.org/resources/experience-studies/2011/2012-ind-annuity-reserving-rpt.

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