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# Annuities as an Asset Class for Fee-Based Advisors

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# Introduction

## Fee-Only Advisors and Annuities

There are competing viable approaches for building a retirement income strategy. Traditionally, Registered Investment Advisors have tended to emphasize investment-centric approaches that rely on earning the risk premium from the stock market as the most effective way to support a retired client's financial goals. With this retirement strategy, stocks are expected to outperform bonds over sufficiently long periods, and this investment outperformance will provide retirees with the opportunity to fund a higher lifestyle. Should decent market returns materialize and sufficiently outpace inflation, investment solutions can be sustained indefinitely to support retirement goals.

Those favoring investments rely on the notion that while the stock market is volatile, it will eventually provide favorable returns and will outperform bonds. The upside potential from an investment portfolio is viewed as so significant that insurance products are not needed. Advocates for this strategy are generally more optimistic about the long-run potential of stocks to outperform bonds, so retirees are generally advised to take on as much risk as they can tolerate to minimize the probability of plan failure. Answers about asset allocation for retirees generally point to holding around 50 to 80 percent of the retirement portfolio in stocks.

In recent research highlighted at Michael Kitces' Nerd's Eye View blog, Alex Murguia and I determined that this investments-centric approach will resonate best with about one-third of the population aged 50-80 in the United States.

There are other viable options that favor incorporating contractual protections and commitment to a strategy which are more appealing to two-thirds of the population when seeking to meet essential spending needs in retirement.

Investments-centric financial advisors may respond differently to this finding. Some will dismiss it, arguing that aggressive and diversified portfolios are the best way to fund retirement and so the advisor's job is to encourage retirees to invest as aggressively as possible to be exposed to the most possible stock market gains. Other advisors will recognize that there is more than one way to create sustainable retirement income, and it is important to also be open to a role for insurance-based tools such as annuities that use risk pooling to support retirement expenses. A personalized plan can be tailored for each individual client using the appropriate combination investment and insurance tools to make the client comfortable with their chosen approach. Some clients will be okay with only using investments, some may already have enough traditional pension income that annuities are not needed, but some may have a gap between reliable income and core spending needs that they would feel most comfortable closing with an annuity.

A personalized plan can be tailored for each individual client using the appropriate combination investment and insurance tools to make the client comfortable with their chosen approach.

Advisors wishing to use a broader range of tools, such as annuities, with their clients have faced constraints over the years. Historically, annuities have mostly been sold through financial advisors who serve as intermediaries and receive a commission on the sale, rather than being sold directly by the insurance company to the consumer. Having insurance companies compensate the advisor through a commission has created problems for financial advisors who only accept fees from their clients rather than commissions for selling financial products.

In recent years, the fee-only model for financial advice has grown in popularity. It is often designed to charge a percentage of assets under management or charge hourly fees or fixed fees for providing planning services. Fee-only advisors have effectively won the public debate about this type of compensation model being more aligned with serving consumer interests. Commissions were argued to create a conflict of interest, as a commission-based advisor need only to sell suitable financial products that are not necessarily putting the client's needs first.

While fee-only advisors can be aligned with client interests during the accumulation phase by seeking to accumulate more assets and grow the investment portfolio, the fee-only model does not necessarily align with managing retirement risks during the distribution phase that focuses on lifetime income rather than portfolio growth. It is concerning that fee-only financial advisors have been particularly slow to adopt the use of annuities. Caution about annuities relates to their complexity and the confusion this complexity can create among consumers, their built-in fees and surrender charges for early distributions, and their commission-based compensation model. This has left their clients more exposed to market volatility and longevity risk when seeking to build retirement income plans than they may truly be comfortable with taking.

This is changing. Insurance companies are now creating annuities that can fit into the toolbox of fee-only financial advisors in a much more effective manner. It is now increasingly possible to treat the annuity assets in the same manner as other investment options are treated on the platforms used by fee-only advisors to consolidate and manage client assets. For deferred variable and index annuities, the contract value is known, and income annuities can be managed by accounting for the present value of their remaining payments. This makes it possible for advisors to charge their fees on the assets held inside the annuity in the same way as for other investment assets.

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For fee-only annuities, internal costs can be reduced because advisors can charge their fees from outside the annuity. The insurance company no longer needs to charge more from within the annuity to collect fees to compensate the advisor. This can result in lower mortality and expense charges on the annuity, and surrender charges can be reduced or even eliminated. For variable annuities, lower internal expenses can allow for more step-up opportunities and upside potential. A fee-only index annuity can provide more for the options budget, since advisor fees do not have to be supported internally. This can allow the owner to enjoy greater participation in the market upside. Allowing fee-only advisors to also incorporate annuities in their planning should help to increase their exposure to the public in the coming years.

I believe that financial advisors who can draw from multiple strategies and tools are best positioned to win in the long-term quest for serving and delighting the most clients. It behooves advisors to beef up their tool kits and have as much comfort with using annuities as they do investments. I hope this excerpted chapter on "Annuities and Risk Pooling" from my Retirement Planning Guidebook: Navigating the Important Decisions for Retirement Success may help with getting advisors up to speed on using annuities. This chapter provides an understanding of the value of risk pooling and mortality credits, an explanation for how different types of annuities work, and an explanation for how shifting from bonds to annuities has the potential to improve retirement planning outcomes in terms of better meeting spending needs and supporting legacy.

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## About the Author

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He holds a doctorate in economics from Princeton University and has published more than sixty research articles in a wide variety of academic and practitioner journals. His research has been discussed in outlets including the print editions of the Economist, New York Times, Wall Street Journal, Time, Kiplinger's, and Money magazine.

He is also author of three other books in the Retirement Researcher's Guide Series: Reverse Mortgages: How to Use Reverse Mortgages to Secure Your Retirement, How Much Can I Spend in Retirement: A Guide to Investment-Based Retirement Income Strategies, and Safety-First Retirement Planning: An Integrated Approach for a Worry-Free Retirement.

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# What's Inside

# Annuities and Risk Pooling

Annuities are another important tool for funding retirement spending. They are contracts which can be structured to provide a series of payments from an insurance company, either for life or for a fixed period. Lifetime income protections available through annuities can support a retirement income goal through risk pooling and mortality credits. The contract owner is the one who buys and makes decisions about an annuity contract. The annuitant is the person or persons on whose age and survival is used to determine annuity payments. The contract owner is often also the annuitant, but this is not strictly necessary. The beneficiary is the one who will receive any death proceeds from the annuity.

## A Caveat on Annuities

In this discussion, I am mostly making an implicit assumption that the annuity is competitively priced. Fees reflect what is needed to support the guarantees provided by the insurance company and to keep the company profitable. But fees are not excessive such that the value to the consumer is eliminated. Not all annuities are created equally in this regard. Deferred annuities, especially, can be complex financial instruments. That complexity can hide a lack of competitiveness in the pricing of individual products. An annuity that is pitched along with a free dinner presentation is possibly not the type of financial product I have in mind. One should tread carefully. Due diligence and a comparison with other annuity options is necessary to ensure that the product is priced fairly and aligns with the purchaser's expectations. I do not want the "bad" annuities out there to catch a free-ride off of my explanations about "good" annuities.

Many types of annuities exist. Our focus will be on immediate and **deferred income annuities, deferred variable annuities, and deferred fixed index annuities**. In providing an overview of annuity types and how they can be incorporated into retirement planning, this chapter provides a summary of the content from my book, Safety-First Retirement Planning: An Integrated Approach for a Worry-Free Retirement. Readers seeking a deeper dive into these topics may refer to that book for additional details.

## We now will discuss:

1. The basic logic behind annuities
2. How different types of annuities work
3. How annuities can fit into a retirement income plan

# The Fundamental Logic of Annuities with Lifetime Income

Before digging deeper into different types of annuities, it is worth first focusing on how a basic life-only income annuity works and how it fits into retirement planning. A simple annuity can effectively replace bond holdings in a retirement plan that are earmarked to meet the lifetime spending goal. The question is why should a retiree hold any bonds in the portion of their asset base designed to cover ongoing retirement spending goals?

Premiums for the income annuity are invested in bonds (the insurance company adds your premium to its bond-heavy general account). The annuity then provides payments precisely matched to the length of time they are needed. Stocks provide opportunities for greater investment growth. Individual bonds can support an income for a fixed period, but they do not offer longevity protection beyond the horizon of the bond ladder created. Bond funds are volatile, exposing retirees to potential losses and sequence risk while still not providing enough upside potential to support a particularly high level of spending over a long retirement. Risk pooling with an income annuity can support a higher level of lifetime spending compared to bonds. Stocks also offer the opportunity for higher spending, but without any guarantee that stocks will outperform bonds and provide capital gains during the pivotal early years of retirement.

Income annuities can be viewed as a type of coupon bond which provides payments for an uncertain length of time in which the principal value is not repaid upon death. Another way to think about income annuities is that they provide a laddered collection of zero-coupon bonds that support retirement spending for as long as the annuitant lives. Much like a defined-benefit pension plan, income annuities provide value to their owners by pooling risks across a large grouping of individuals.

Longevity risk is one of the key risks which can be managed effectively by an income annuity. Investment and sequence risk are also alleviated through the more conservative investing and asset-liability matching approach on the part of the insurance company for the underlying assets held in the insurance company's general account. The payout rates for an income annuity assume bond-like returns and longevity is further supported through risk pooling and mortality credits, rather than by seeking outsized stock market returns.

Longevity risk relates to not knowing how long a given individual will live. But while we do not know the longevity for any one individual, insurance company actuaries can estimate how longevity patterns will play out for a large cohort of individuals. The "special sauce" of the income annuity is that it can provide payouts linked to the average longevity of the owners because those who die early end up leaving money on the table to subsidize the payments to those who live longer. Though it may seem counterintuitive to subsidize payments to others, this act can allow all owners in the risk pool to enjoy a higher standard of living than bonds could support. All annuity owners know that the mortality credits will be waiting for them if they do end up living beyond life expectancy.

Longevity risk is one of the key risks which can be managed effectively by an income annuity.

Meanwhile, sequence risk relates to the amplified impacts that investment volatility has on a retirement income plan that seeks to sustain withdrawals from a volatile investment portfolio. Even though we may expect stocks to outperform bonds, this amplified investment risk also forces conservative individuals to spend less in case their early retirement years are affected by a sequence of poor investment returns. Many retirement plans are based on Monte Carlo simulations with a high probability of success, which implicitly assumes lower investment returns. An income annuity also avoids sequence risk because the underlying assets are invested by the annuity provider, mostly into individual bonds which create income that matches the company's obligations for covering its promised annuity payments.

In hindsight, those who experienced either shorter retirements or who benefited from retiring at a time with strong market returns would have probably preferred if they had not purchased an income annuity. Income annuities are a form of insurance. They insure against outliving assets due to some combination of a long life and poor market returns. In the same vein, someone who purchased automobile insurance might wish they had gone without if they never had an accident. But this misses the point of insurance. We use insurance to protect against low probability but costly events. In this case, an income annuity provides insurance against outliving assets and insufficient income late in retirement.

Income annuities offer an important benefit to those who do not make it long into retirement, especially for those who are particularly worried about outliving their assets. That benefit can be seen when comparing the income annuity to the alternative of basing retirement spending strictly on a systematic withdrawal strategy from an investment portfolio. To "self-annuitize," a retiree must spend more conservatively to account for the small possibility of living to age ninety-five or beyond while also being affected by a poor sequence of market returns in early retirement. The income annuity supports a higher spending rate and standard of living than this from the outset. All income annuity owners, both the short-lived and long-lived, can enjoy a higher standard of living during their life than they would have otherwise felt comfortable with by taking equivalent amounts of distributions from their investments.

Upon entering retirement, a retiree has several options regarding allocations between stocks, bonds, and income annuities.

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Let us consider a simple example with four different approaches. With the basic understanding in place, we can then dig in deeper.

## Bonds

Suppose a retiree wants to stretch the nest-egg over twenty years and will earn 0 percent returns by investing in bonds. We could assume higher bond returns, but that would simply complicate the math without changing the intuition behind the example. Since insurance companies also invest in bonds, higher interest rates would increase the annuity payout rate as well. With 0 percent returns, these bonds allow for spending at 5 percent of the initial portfolio balance—the sustainable spending rate—every year for twenty years. With this spend rate, bonds will leave nothing to support spending beyond year twenty.

## Income Annuities

Now suppose life expectancy is twenty years and longevity risk is added to the equation. Some will not make it twenty years; others will live longer. With the 0 percent returns the annuity provider earns from bonds, the provider could still support this 5 percent spending rate through risk pooling and mortality credits no matter how long the annuitant survives.

## "Self-annuitization"

Now suppose the retiree "self-annuitizes" instead by managing this longevity risk without insurance. This requires picking a planning age one is unlikely to outlive. Suppose the retiree decides to plan under the assumption that retirement will last for thirty years. In this case, to spread assets out over thirty years with a 0 percent investment return, the spending rate must fall to 3.33 percent. Note as well, the spending rate could only be 2.5 percent to support expenses for forty years. In this situation, there is a direct relationship between a longer life and a lower rate of spending. Retirees are forced to spend less to the extent they worry about outliving their portfolio. In terms of an unintended legacy, if one did live for twenty years, then a third of the assets would remain with a thirty-year plan, or half of the assets would remain with a forty-year plan. Compared with an annuity, using bonds leads to a lower than possible retirement lifestyle and potentially an unintentionally large legacy, but with risk for shortfalls for an even longer than planned lifetime.

## Stocks

Alternatively, one could seek an investment return higher than 0 percent by including stocks. With a fixed annual investment return of 3.1 percent, the retiree could support the 5 percent spending rate for thirty years. With a 4.2 percent investment return, spending could be supported for forty years. The question then centers around how likely it is for the portfolio to earn these higher rates of return through a stock-heavy focus.

Stocks create risk. Seeking this higher investment return requires the retiree to accept portfolio volatility with a growing allocation to stocks. Spending from investments further heightens sequence risk. A few poor returns early on could easily derail the attempt to support that 5 percent spending rate for as long as the plan targets. While it is possible to obtain the higher returns necessary to support a bigger spending level in this way, there is no guarantee that this approach will be successful. The stocks strategy provides greater upside potential for wealth to grow, but it also creates greater downside risk that the retiree will not be able to meet the spending goal throughout retirement. The range of potential outcomes widens.

The introduction of stock market risk requires two additional elements for the decision-making of our risk averse retiree. What failure probability does she comfortably and willingly accept that her portfolio will not be able to support spending through the planning age? As well, how high of stock allocation is she willing to accept, in terms of her ability to stomach the daily volatility experienced by her investment portfolio? With volatile investments and a fixed spending goal, some probability for portfolio depletion must be accepted by anyone seeking upside growth potential through the equity risk premium.

Annuitized assets do not provide upside in the sense that a legacy would be left when markets do well, but they also eliminate downside spending risk. The long-lived do receive a form of upside through mortality credits. The effective return from the annuity matches what the stocks needed to earn to support those longer retirements. For our example in which we said that stocks required a 4.2 percent return to fund a 5 percent distribution rate for 40 years, an annuity is providing this same return to an owner who happens to live this long.

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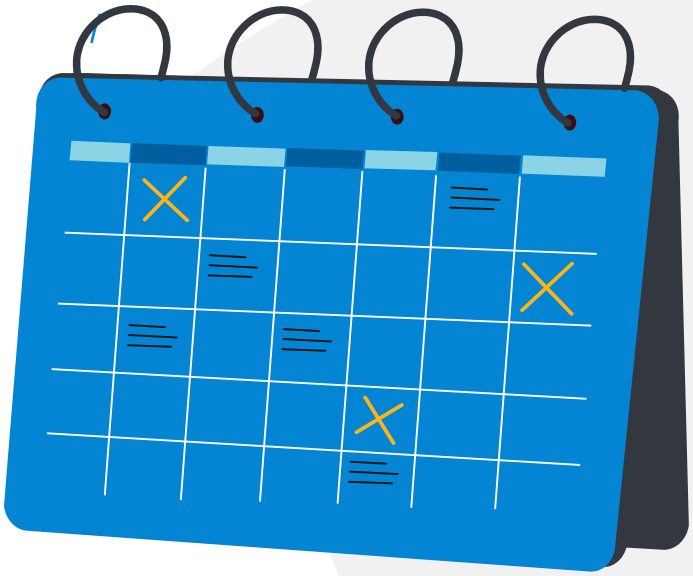
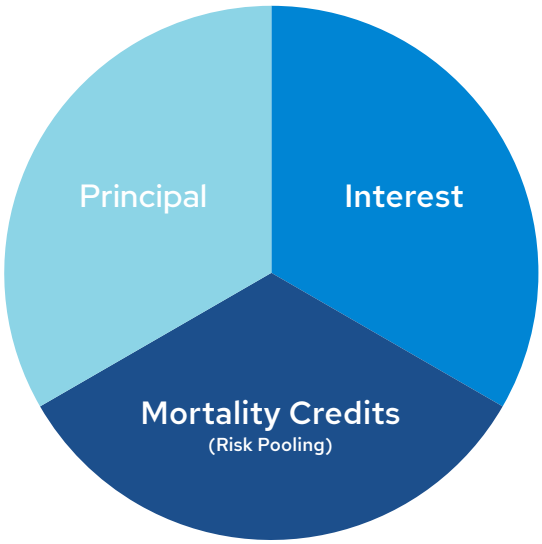


"Self-annuitizing" requires lower spending, and stocks could support higher spending with upside growth, but that adds risk as well. As for bonds, ultimately, the question is this: why hold any bonds in the part of the retirement portfolio designed to meet spending obligations? The income annuity invests in bonds and provides payments precisely matched to the length of retirement, while stocks provide opportunities for greater investment growth above bonds. Bonds alone hold no advantage.

The income annuity provides a license to spend more from the start of retirement due to the insurance company's ability to pool risk. Supported spending from an income annuity is higher because it is based on reaching life expectancy, and should the retiree live beyond life expectancy, the higher income continues to be sustained because of the subsidies arriving from those who died early. The expectation that subsidies will arrive as needed allows spending to increase for everyone from the very start of retirement. [The chart below] highlights how mortality credits represent a third source of spending with an income annuity beyond the spenddown of principal and the interest generated by that principal.

Regarding sequence risk, for those who "self-annuitize," there are two options for deciding how to spend from investments. One is to spend at the same rate as the annuity with the hope of either dying before running out of money, or the hope that the investments earn strong enough returns to sustain the higher spending rate indefinitely. This approach requires acceptance of the possibility that the standard of living may need to be cut later in retirement should the hopes for sustained investment growth not pan out. The alternative is to spend less early on and, should good market returns materialize, increase spending later or leave a bigger legacy. The problem with intending to increase spending over time is that it is the reverse of what most people generally wish to do, which is to spend more early in retirement and cut back as life slows down at more advanced ages.

Sources of Income Annuity Payouts



# Overview of Annuity Types

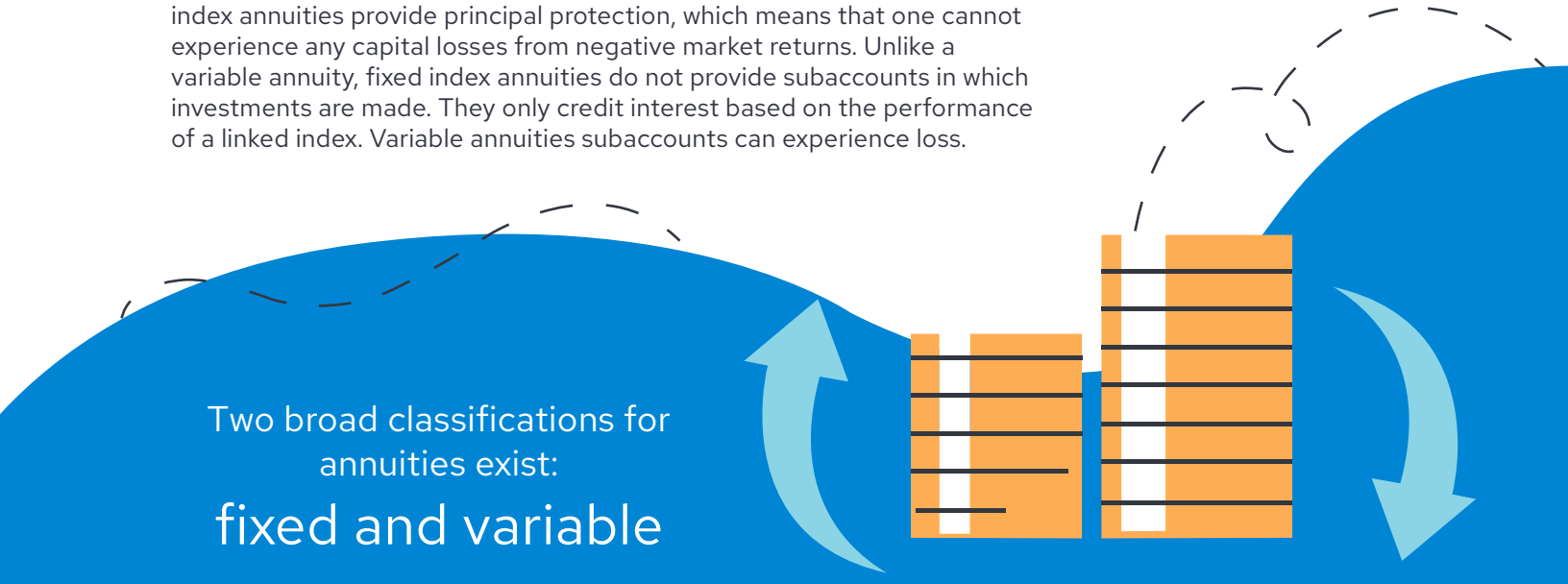
The previous explanation about how an annuity can contribute to a plan was based on the simplest form of an annuity: A life-only income annuity. Now we are ready to step back to describe the broader annuity universe.

A fundamental aspect that defines an annuity is that it is a contract which can be annuitized to provide a series of payments from the insurance company, either for life or for a fixed period. However, today there are many annuities that downplay this aspect of annuitization. As the tax code in the United States provides tax-deferral advantages for annuities, other forms of annuities have evolved with a greater emphasis on providing tax-deferred growth for the assets in the annuity with a de-emphasis on their income-generating abilities. As well, more recent developments include optional riders that can be added to annuities to support a lifetime income without having to annuitize the contract.

Two broad classifications for annuities exist: fixed and variable. Simply, fixed annuities credit interest to the underlying assets in the annuity at a fixed rate (which can change over time), while variable annuities position the premiums into subaccounts that allow for investments into different funds earning a variable rate of return. Fixed annuities pool assets in the insurance company's general account, while variable annuities hold assets in separate investment subaccounts that are like mutual funds. Since variable annuities behave more like investments, those selling them need to be properly licensed in most states to sell both insurance and investments.

This definition about fixed and variable annuities can be confusing. First, income annuities are fixed annuities, but they do not show an underlying account balance to which interest is credited. Rather, the insurance company determines the payout rate based, in part, on the interest it projects to earn on the underlying premiums held in its general account.

Second, fixed index annuities can be structured to credit interest based on the performance of a volatile investment index. This can make them sound more like a variable annuity, but technically it is just a matter that fixed interest is being credited based on outcomes for a volatile index. Fixed index annuities provide principal protection, which means that one cannot experience any capital losses from negative market returns. Unlike a variable annuity, fixed index annuities do not provide subaccounts in which investments are made. They only credit interest based on the performance of a linked index. Variable annuities subaccounts can experience loss.



Two broad classifications for annuities exist:

fixed and variable

An even more recent development is structured annuities that behave a lot like index annuities, but which can experience losses. These are technically a type of variable annuity, and they go by many names including buffered annuities, variable index annuities, or registered index-linked annuities (RILAs). Finally, variable annuities could include subaccount options that provide fixed returns in the same manner as a fixed annuity, but the distinction is that variable annuities position the assets in investment subaccounts, unlike fixed annuities that hold them as part of the insurance company's pooled general account.

One other potentially confusing way to classify annuities is whether they are immediate or deferred. This distinction is relevant because it affects the tax treatment for annuities, as will be discussed in Chapter 10. The confusion relates to how these terms are used in two different ways with annuities. Formally, the classification is not related to when guaranteed income begins, but rather to when the act of annuitization takes place. Some deferred annuities could provide income immediately through structured lifetime payments, while some immediate annuities may defer income payments. For the former, the variable annuities and index annuities with income riders that we discuss are both types of deferred annuities, even if guaranteed distributions start immediately. The reason they are still called deferred annuities in this case is that technically the contract does not annuitize unless the contract value of the underlying assets has fallen to zero.

Meanwhile, for immediate annuities the act of annuitizing the assets takes place at the time the premium is paid. There is no liquidity for the underlying premiums past that stage. "Immediate" immediate annuities, such as single-premium immediate annuities (SPIAs), begin income payments within one year of annuitization, while deferred immediate annuities begin income payments at least one year past the date of annuitization. Since the name "deferred immediate annuity" is so confusing, a more common alternative name for them is deferred income annuity (DIA). Regarding the more confusing name, though, the immediate part of the name refers to immediate annuitization, and the deferred part of the name refers to the delay in starting the annuitized payments.

One other potentially confusing way to classify annuities is whether they are **immediate** or **deferred**.

# Annuities for Accumulation

For retirement income, the discussion of annuities naturally tends toward using them for systematic payouts in retirement, either for a lifetime or for a fixed period. However, through their ability to provide tax deferral for gains, annuities can also be used as pure accumulation tools. Though every annuity, by definition, must include a means to convert into a guaranteed income stream, this is not the priority when used for accumulation. Owners may plan to eventually have the lump-sum contract value returned after it has provided tax deferral. Chapter 10 dives deeper into the tax aspects of annuities.

Deferred fixed annuities (DFAs), or multiyear guaranteed annuities (MYGAs), are the annuity equivalent of holding CDs or other shorter-term fixed-income investments to a targeted maturity date. Their objective is to seek competitive after-tax fixed income returns for assets. This may be possible through their principal protection and lack of interest rate risk (they do not lose value when interest rates rise) and their tax deferral.

Fixed index annuities (FIAs) can also be used in a similar manner. We discuss FIAs later with an optional lifetime withdrawal benefit included. But when such benefits are not included, FIAs can be treated as another alternative to a taxable bond portfolio providing principal protection, tax deferral, and some exposure to market upside which could make them competitive with the after-tax returns on bonds.

A low-cost deferred variable annuity may also be used for tax deferral rather than thinking of it as a source for lifetime income. Deferred variable annuities were created in the 1950s in the United States as a tax-deferred vehicle for accumulating assets. They grew in popularity after the Tax Reform Act of 1986 limited the opportunities for tax-deferred savings in qualified retirement plans. Such a deferred variable annuity with low costs and de-emphasized guarantees provides tax deferral for those investors who have already filled other options and seek to invest further in tax-inefficient asset classes that may generate ordinary income and short-term capital gains. To benefit from tax deferral, it is vital that the annuity costs are less than the tax benefits.

# Income Annuities – SPIAs and DIAs

We now shift to longer discussions for the key types of annuities used for retirement income planning. For those seeking to spend more in retirement than the bond yield curve can support, the alternative to seeking risk premium through an aggressive asset allocation is to use risk pooling.

Income annuities are the simplest type of insurance products which trade a lump-sum payment for protected lifetime income. The ability to convert a portion of assets (as it is not an all-or-nothing decision) into a guaranteed income stream is a fundamental retirement income tool which contrasts with an investment portfolio in terms of the advantages and disadvantages for managing retirement risks. Income annuities are fixed annuities, and they are annuitized at the time of contract issuance and premium payment. This means they are immediate annuities, even if the start date for payments is deferred.

We start our discussion of annuities with the income annuity because it is the most straightforward and easy-to-understand way to convert a pot of money into a guaranteed stream of spending for life. Income annuities are also known as immediate annuities, single-premium immediate annuities (SPIAs), deferred income annuities (DIAs), qualified longevity annuity contracts (QLACs), or longevity insurance.

Risk pooling and mortality credits are the drivers of value from an income annuity. The annuitant accepts the risk of dying early and receiving fewer payments from the annuity in exchange for the ability to continue receiving payments no matter how long one ends up living. By pooling longevity risk with a collection of individuals, an income annuity allows its owners to earmark assets by only needing to fund retirement as though they will earn fixed income returns and live to their life expectancy. Those who end up living beyond their life expectancy will have their continuing benefits subsidized by those who die before life expectancy. While this clearly benefits the long-lived, we can also conclude that it benefits the short-lived as well by allowing them to enjoy a higher standard of living than they might have otherwise been comfortable supporting from an unguaranteed investment portfolio. This can allow for more spending and a more satisfying retirement experience, and more peace of mind compared to those self-managing longevity risk by spending less and then leaving too much behind at death.

For those seeking to spend more in retirement, risk pooling (bold risk pooling) is an alternative to seeking risk premium through an aggressive asset allocation.

# Menu of Income Annuity Features and Options

Income annuities can be either immediate or deferred in terms of when their payments begin, though as noted these are all technically immediate annuities because the contract is annuitized. An immediate income annuity begins income payments within one year of the purchase date, while a deferred income annuity does not begin payments until at least one year after the purchase date. A deferred income annuity purchased at retirement with income beginning at age eighty or eighty-five is also referred to as longevity insurance.

After the Treasury Department updated regulations in 2014 to facilitate the use of longevity insurance inside retirement plans, longevity insurance is now also known as a qualified longevity annuity contract (QLAC). In practice, deferred income annuities are used less as a form of longevity insurance and more for prepaying retirement and removing market risk in the pivotal preretirement years. In such a case, one might purchase a deferred income annuity at age fifty-five or sixty, for instance, for income to begin at sixty-five.

Single life income annuities only cover one person's life. With such an annuity, income payments continue until the annuitant's death. A joint life annuity, on the other hand, continues payments for as long as at least one of two annuitants survives. Often joint annuities are set up for two spouses, but marriage is not a requirement for two annuitants to be included on a joint life contract.

Since payments are expected to last longer when two lives are covered, the joint protection comes at the cost of a lower initial payout rate. A joint life and 100 percent survivor annuity provides the same payment as long as one annuitant is alive. This is the most popular option in practice. With a joint life and 67 percent survivor annuity, for instance, the payment would reduce by 33 percent upon the first annuitant's death, allowing for a higher initial payment.

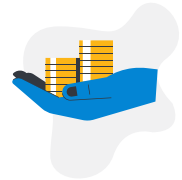
A life-only income annuity is the Platonic ideal, offering the highest payout and the most mortality credits. Payouts are highest because the purchaser is taking the most "hit by a bus risk"—the common fear of signing an annuity contract and then being hit by a bus and killed on the way out of the office. Life-only annuities are popular with academics because acceptance of this risk makes more funds available to the longer-surviving members of the risk pool, allowing one to buy protected lifetime income at the lowest possible cost. In practice, many annuity buyers will be uncomfortable with a life-only annuity. CANNEX, a firm providing annuity quotes, finds that only about 15 percent of the inquiries it receives are for life-only options.

A joint life and 100 percent survivor annuity provides the same payment as long as one annuitant is alive. This is the most popular option in practice.

A variety of other flavors will lower the payout rate but may otherwise make the income annuity a more palatable choice. By offering less mortality credits to the risk pool because you want some protection for your beneficiary in the event of an early death, you should, in turn, expect to receive less mortality credits back from the risk pool in the event of a long life. This is the nature of the trade-off that results in a lower payout rate for added protections. Other flavors of annuities that lower the payout rate in exchange for providing protections to a beneficiary for an early death include:

**Cash refund provision:** Provides a cash refund of the difference to the beneficiary if death happens before the owner receives cumulative payments from the annuity that add up to the initial premium payment. CANNEX reports that about half of the requests it receives include the cash refund.


**Lifetime with ten-year period certain annuity:** Pays for life. If death happens before annuity payments were made for at least ten years, the beneficiary continues receiving payments for the full ten years. These period-certain guarantees can also be arranged for any number of years, such as five, fifteen, or twenty.



**Installment refund:** Works very similarly to the cash refund, except beneficiaries receive the difference as continued annuity payments in installments until the full premium has been returned, rather than receiving a one-time refund.


**Period certain:** An income annuity does not require lifetime payments. It may just make payments for a set period. This works the same way as building a bond ladder and can be an alternative to individual bonds when considering retirement income bond ladder strategies.

## As well, there are generally three options regarding payments:

**Fixed or level income annuity**: These annuities will pay the same amount on an ongoing basis for as long as the contract requires. The purchasing power of the income payments will decrease over time as there is no adjustment made for inflation. CANNEX notes that most requests it receives are for this option.

**COLA:** A cost-of-living adjustment (COLA) provision allows payments grow at a fixed compounding rate each year. For instance, if I decide that 2 percent is a reasonable assumption for future inflation, I might choose a COLA of 2 percent with the intention of preserving the purchasing power for my annuity income. If realized inflation ends up being higher, I will lose purchasing power over time, but purchasing power would increase if realized inflation ends up being lower. COLAs can only approximate the inflation experience in retirement. With payments increasing over time, the initial payment will be less than with a fixed or level annuity.

**CPI:** One could add a provision that the income growth rate of the annuity payments precisely matches the Consumer Price Index (CPI). When inflation is low, income grows more slowly, as do living costs for the retiree. When inflation is high, income grows more quickly to better support the increasing cost of living. CPI-adjusted income annuities hedge inflation risk in the same manner as TIPS. These have been offered in the past, but since January 2020 no company has been offering CPI-adjusted income annuities in the United States.

# Income Annuity Pricing

Pricing income annuities is not as hard as one might think, as the basic recipe requires just three ingredients:

1. Mortality rates (which vary by age and gender) impact how long payments will be made. Younger people will have longer projected payout periods, which means that payout rates must be lower.
2. Interest rates impact the returns the annuity provider can earn from investing the annuity premiums. Higher interest rates imply higher payout rates because the insurance company will be able to earn more interest on the premiums in their general account supporting the annuity payments.
3. Overhead costs relate to extra charges an annuity provider seeks to cover business expenses and to manage risks related to the accuracy of their future mortality and interest rate predictions.

Including mortality rates in the pricing is the secret sauce of the annuity. Retirees could just build a bond ladder on their own and set aside the full present value of their lifetime spending. But because a retiree does not know how long she may live, it becomes necessary to plan for an age well beyond average life expectancy. Annuity owners obtain a discount on the bond ladder pricing because the survival probabilities to each subsequent age indicate whether these payments will need to be made. The annuity price is a survival-weighted present value of potential lifetime payments. Any one individual is either alive or dead. But for a large pool of individuals representing the customer base of the annuity provider, the company can rely on the law of large numbers to evaluate what percentage of customers will remain alive at each subsequent age. If there is only a 10 percent chance that someone is alive at age 100, the insurer only needs to set aside 10 percent as much for that payment as someone who self-manages the risk. This is risk pooling.

Including mortality rates in the pricing is the **secret sauce** of the annuity.

The bond ladder costs more, with the benefit that the bond ladder supports some legacy if retirement is shorter than assumed with the ladder construction. But the bond ladder does not provide any additional longevity protection beyond the end date of the ladder as assets are fully depleted at that time. With the income annuity, that longevity protection can be provided while devoting less funds to the goal.

The life-only income annuity offers the highest payout because it creates the most risk about receiving fewer payments for any beneficiary in the event of an early death. Adding a period-certain payment or a cash refund reduces the potential mortality credits that the annuity owner offers to the risk pool. The higher payout on a life-only income annuity provides compensation for accepting the risk of an early death.

Academics who study income annuities generally suggest a life-only income to fully maximize the income-producing power, with legacy goals covered through other means. But cash refund and period-certain provisions are quite popular in practice. Psychologically, for many it is too difficult to overcome the perceived lack of fairness with a life-only income annuity in which one could die shortly after paying the premium and then receive back little in return.

# Payout Rates and Rates of Return for Income Annuities

The pricing of an income annuity is typically described using either the monthly income amount it generates, or as the annual payout rate of the income received as a percentage of the premium amount. For instance, an income annuity might offer $481.67 per month for a $100,000 premium. For twelve months, that sums to $5,780, which is 5.78 percent of the initial premium amount. The annuity payout rate is 5.78 percent. After aligning with assumptions about how spending may grow with inflation, this payout rate is directly comparable to a sustainable withdrawal rate from initial retirement date assets for an investment portfolio. Both rates incorporate the idea that principal is spent in addition to any investment returns.

It is important to recognize that the payout rate is not a return on the annuity, which may create some confusion. It is wrong to compare the payout rate to an interest rate that involves the subsequent return of principal. For instance, if you can earn 1 percent by holding a CD and 5.78 percent from an income annuity, the income annuity is not almost six times more powerful than the CD.

The problem is that the 1 percent number for the CD only represents its interest payments. The principal value is returned at maturity. Meanwhile, a 5.78 percent payout from an annuity includes interest and principal payments (as well as mortality credits—the true source of additional returns beyond that provided by a fixed-income alternative). Principal is being spent as well, and so the comparison to the CD rate is neither fair nor meaningful.

The annuity does have a return, but it is less straightforward to calculate. To know the annuity return, it is necessary to know how long the annuitant will live and how many annuity payments will be generated. Or, at least, returns can only be calculated by assuming how long income payments will be received. A longer life means more payments from the annuity, which helps to increase the return it provides over time. And if the underlying investments in the general account provide a higher return, that feeds into a higher annuity payout rate, which helps to boost the annuity's return more quickly as well. For life-only annuities, returns start out negative, as cumulative payments fall short of the premium paid. The return crosses from negative to positive when the total payments received exceed the premium paid. With enough time, the return can eventually exceed the payout rate. A competitive income annuity will provide a return matching bonds at around the owner's life expectancy. Eventually those continuing cash flows will imply returns that are competitive with stocks.

An income annuity is designed to provide a higher return to people who live longer and therefore need higher returns to fund their retirements. Though tragic to consider, those who do not live as long do not end up needing strong returns to fund their retirement. This is how annuities can better match to the funding needs of a retirement plan.

To know the annuity return, it is necessary to know how long the annuitant will live and how many annuity payments will be generated. Or, at least, returns can only be calculated by assuming how long income payments will be received.

# Money's Worth Measures for Income Annuities

Annuities have a reputation for being a high-fee financial product. Is this reputation deserved? We will address this for different types of annuities, starting first with income annuities. It is a bit complicated to answer this for income annuities because they do not have visible fees. There are no fees extracted from the quoted payout rate, as the payout rate is already a net number after fees have been deducted internally. Simply, with the internal fees, the quoted payout rate is lower than otherwise possible.

Fortunately, we can reverse engineer the fair price for an income annuity without fees and then compare it with real-world annuity payout rates to obtain a money's worth measure for the income annuity. The "fair price" without overhead costs just involves using interest rates and mortality rates to calculate the survival-weighted present value of the potential lifetime payments. The additional complication relates to making reasonable assumptions for interest rates and mortality rates.

In determining the money's worth for an annuity, we must consider three issues: could the retiree earn the same returns from her own fixed-income investments with the same risk level, how does the retiree's objectively determined longevity prospects compare with that of the overall risk pool, and how much does the retiree value mortality credits as based on her longevity risk aversion and subjective views about how long she might live. Purchasing income annuities can be a win-win situation both for the consumer and the insurance company when the benefits created through risk pooling are shared between both parties in the transaction.

1

First, can a retiree invest in the same fixed-income portfolio and earn the same returns as the insurance company can obtain for its general account? We note that the insurance company may be able to obtain higher investment yields because of its ability to diversify among higher-yielding bonds with greater credit risk, to use asset-liability matching to hold less liquid and longer-term bonds, and to receive institutional pricing on purchases which avoids the pricing mark-ups faced by retail investors.

2

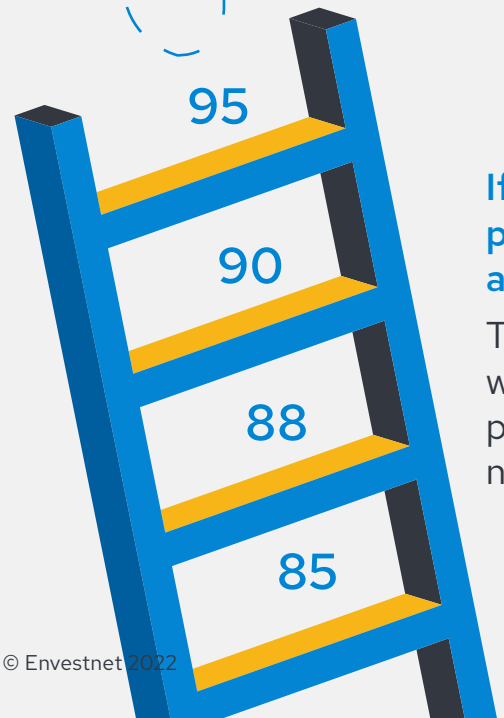
Second, it is important to be realistic about longevity when determining whether an income annuity is priced fairly. Someone who can reasonably expect to live longer than average should not try to calculate a fair price using population-average mortality. If annuity prices are simulated with mortality rates for the general population, that will cause the money's worth measures to be lower and annuities to look more expensive. My readers will tend to display characteristics that are associated with increased longevity, such as higher education levels, more income, greater wealth, and a stronger health focus. When this is the case, money's worth estimates based on mortality tables reflecting the longer lifespans of annuitants are more reasonable to use.

3

Third, separate from the objective money's worth measure, it is important to also consider the subjective value being received by the annuity owner. For those with longevity risk aversion, the prospects of spending from investments may be such that an income annuity could still support more spending than the retiree otherwise would be comfortable taking from investments. With an investments-only strategy, longevity risk aversion is manifested through a lower spending rate from investment assets. Because income annuities pool longevity risk, they can help to reduce the worry individuals have about outliving their assets.

The income annuity payout is based on objective mortality statistics rather than subjective fears. The case for an income annuity becomes stronger for individuals more worried about longevity. Such individuals may value income annuities at more than their fair price. For instance, if my life expectancy is 85, but I build a financial plan to work until age 95, adding an income annuity to the plan will improve my funding status. The present value of the annuity payments is greater when I plan to live to 95, because the annuity is priced with objective mortality data where people do not live that long on average. The income annuity provides risk pooling and mortality credits that individuals cannot create on their own. Just because money's worth measures imply underlying costs to the owner does not necessarily mean that annuities are a bad deal for anyone who experiences longevity risk aversion.

For example, a $100,000 premium may be quoted as supporting $600 per month for life. Without any built-in fees, perhaps the fair monthly income could have been $610 or $620. This reverse engineering process lets one estimate the costs built into an income annuity. If an income annuity provides $600 per month, but we simulate that a fair price is to provide $610 per month, then the money's worth of the annuity is $600 / $610 = 0.9836. In this case, the commercial annuity pays 1.64 percent less than the fair price. We could interpret this 1.64 percent as an upfront transaction cost or one-time fee for purchasing the annuity. At the same time, perhaps the household could not invest for as much yield as the insurance company or might have an unusually long expected lifespan, such that a more personalized fair monthly income is only $580 or $590. In this case, the annuity provides a great deal. These matters are not transparent. We must calculate the actuarially fair price for an annuity and then compare it to the actual price. Then we have a better sense of the "money's worth" from the annuity.




**If my life expectancy is 85, but I build a financial plan to work until age 95, adding an income annuity to the plan will improve my funding status.**

The present value of the annuity payments is greater when I plan to live to 95, because the annuity is priced with objective mortality data where people do not live that long on average.

# Deferred Annuities with Lifetime Income Benefits

Generally, the most efficient means for balancing protected income and investment upside is to use annuities as a replacement for bonds and combine life-only income annuities with aggressive stock portfolios. However, this requires a degree of investor self-control and long-term focus that may be difficult to achieve in practice. It requires accepting both the loss of liquidity as annuity assets disappear from the portfolio balance, as well as accepting a more aggressive asset allocation for what remains in the portfolio. Many retirees are nervous about these trade-offs.

As a means for accommodating the concerns of real-world retirees, deferred variable annuities (VAs) and fixed index annuities (FIAs) with lifetime spending protections have developed as a more palatable compromise. In practice, sales of deferred annuities dwarf sales of immediate annuities.

With deferred annuities, owners continue to see the annuity assets on their financial statements as part of the overall portfolio balance. As well, those assets maintain exposure to market upside that is not provided within an income annuity. The appeal to retirees is based on the combination of downside protection with a protected income stream, upside growth potential through their underlying investments (or links to investment indices in the case of fixed index annuities), and liquidity for the underlying assets, while also offering the potential for tax-deferral. Retirees can see their account values, they can continue to make choices about how their funds are invested, they can access their funds, and any funds remaining at death are generally available to beneficiaries as a death benefit, all while ensuring protected income through the inclusion of an optional guaranteed living withdrawal benefit (GLWB) rider on the contract.

Nevertheless, the features and workings of deferred annuities with lifetime income benefit riders can be rather complex. For those just starting to investigate deferred variable or index annuities, complexities relate to understanding how returns are calculated for the contract value, how the income guarantees work, and how fees are structured.

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Overall, FIAs may reduce the volatility of the underlying contract value relative to a variable annuity.

# Contract Value Growth

The underlying contract value of deferred annuity assets can grow (or shrink, with variable annuities) throughout the life of the contract. With variable annuities, the process is straightforward and comparable to how most will understand investing with brokerage accounts. VAs allow for the direct investment of premiums into subaccounts representing different asset classes and their investment performance less distributions and fees will determine the value of remaining assets over time. Variable annuity subaccounts are subject to capital losses.

Since FIAs are fixed annuities, crediting interest is the technical term for the returns generated by their contract value. FIA premiums are added to the general account of the insurance company and credit interest to the owner based either on a fixed return or on the performance of a linked market index. FIAs offer index-linked interest, but they are not invested directly into the underlying index. There are no subaccounts. They simply pay interest to the owner using a formula linked to the index performance.

With FIAs, the credited interest (or returns) can be structured more precisely in terms of controlling downside and upside exposures. FIAs protect principal in the sense that 0 percent interest is credited even if the underlying index declines significantly in value. To obtain this protection, FIA owners should expect to receive only a portion of any positive gains experienced by the index. Overall, FIAs may reduce the volatility of the underlying contract value relative to a variable annuity.

For FIAs, insurance companies generally offer access to different index options as well as a fixed interest option. Contract owners can often combine these options in any way they choose and can change the allocations at the start of each new term. Common index choices include the S&P 500 for large capitalization US stocks, or the MSCI EAFE index that provides representation for international stocks. Only the price returns (capital gains or capital losses) matter with these indices as dividends are excluded from the returns when determining credited interest. This is because financial derivatives are used to link performance rather than owning the underlying assets, so dividends are not available.

Almost countless crediting methods are used in practice and there is a trend to increase the complexity of the methods used. With the chosen index, interest crediting will generally be based on a formula that can include floors, caps, participation rates, and spreads. As an example, we will consider an annual reset one-year term point-to-point crediting method with a participation rate.

The one-year term and the point-to-point method means that the changes in the index values on one-year contract anniversaries will be used to calculate interest. Annual point-to-point looks at the change in the index at two different dates, one year apart. At the end of each yearly term on the anniversary date of the contract, the interest-crediting formula uses the index gain for that year (the price return, not including dividends) to credit interest. A floor of 0 percent is protected, and a participation rate determines the percentage of upside gains that are credited.

As for the annual reset design, this reflects how interest crediting calculations start fresh for each term. If the index lost 10 percent in the previous year and the FIA credited 0 percent interest for that year, it is only the new point-to-point change for the current year that matters to calculate the new term's interest. There is no need for cumulative gains to make up for previous losses when the annual reset provision is included.

A simple way to think about the downside protection with the guaranteed floor is that the insurance company buys enough bonds with the annuity contract value that the growth of that portion with interest will match the original contract value at the end of the term. With what is left after purchasing bonds to protect the principal, the insurance company keeps a portion to cover company expenses and profit motives, and the remainder is the "options budget" used to purchase upside exposure to the index.

When the FIA offers a participation rate on upside, the insurance company can use the "options budget" to buy a one-year at-the-money call option on the S&P 500 index. This is a financial derivative that provides its owner with the right, but not the obligation, to buy shares of the S&P 500 at the option's strike price. The option is at-the-money if the strike price matches the current value of the index. If the index loses value during the term, the option expires worthless, and principal was protected with the bonds. If the index experiences capital gains (not including reinvested dividends) during the term, the owner receives exposure to the upside through the call option. The participation rate is the ratio of the "options budget" to the price of the call option, which provides the percentage of index gains received.

Because there is a cost for creating protection for the contract value against a loss when the index declines in value, one should not expect to receive the full upside potential from the index. The call options will generally cost more than the size of the options budget. FIAs do not provide a way to get the returns from the stock market without accepting the risk of the stock market.

A simple way to think about the downside protection with the guaranteed floor is that the insurance company buys enough bonds with the annuity contract value that the growth of that portion with interest will match the original contract value at the end of the term.

The parameters offered by an FIA will depend in large part on the level of interest rates and the cost of financial derivatives for the associated index. Higher interest rates mean that principal can be protected with less assets, which then leaves more for the options budget used to purchase upside exposure. Less expensive call options will also allow for more upside participation to be purchased. Factors that reduce the options prices include less implied volatility for the underlying index, an increase in the strike price for the option relative to the current index price, a lower risk-free interest rate, and a shorter term to maturity. Participation rates can conceivably be higher than 100 percent if interest rates are high enough and the call options are cheap enough. On a related point, it should also be clear that if the owner is willing to accept a lower floor, it would be possible to gain more upside potential since less is needed for bonds and more is available to purchase call options.

It is also vitally important to understand that the amount of upside potential that can be offered by an FIA will vary over time as interest rates and call option prices change. With an annual reset design, the insurance company must repeat the process each year and will face different interest rates and call option pricing as these variables change values over time. More upside potential is possible with higher interest rates and cheaper call options, and vice versa. This is the reason why insurance companies maintain the freedom to change the contract parameters (such as the fixed rate, participation rate, cap rate, or spread) at the beginning of each new term, subject to a minimum or maximum value allowed for each parameter within the contract.

With indexed annuities, the floor could be negative or there may be other mechanisms that allow for capital losses on the contract value. If the floor is less than zero, then the annuity is technically a variable annuity that maintains most characteristics of the FIA except that it is also regulated as a security because it can experience losses. These types of structured annuities are growing in popularity and go by various names including registered index-linked annuities. Aside from a negative floor, these annuities may also have buffers.

For instance, a product that provides a 10 percent buffer would mean that the interest credited is zero percent for index losses of up to 10 percent. If the index loses more than 10 percent, then this approach would credit the amount of the loss exceeding 10 percent. An 18 percent loss on the index would lead to an annuity loss of 8 percent, but an 8 percent loss for the index would lead to no loss. **Accepting this greater downside risk can support more upside potential, which contributes to their growing use in the marketplace.**

# Lifetime Income Benefits

We have just described contract value growth for deferred annuities. For deferred annuities offering guaranteed lifetime withdrawal benefits, there can be a separate and parallel set of calculations to determine a benefit base and guaranteed income amount. We must consider how guaranteed income is determined for both the growth during the deferral and distribution periods.

Before going further, I must emphasize that obtaining guaranteed income through a lifetime income rider is not the same as annuitizing the contract. The contract is still technically deferred after lifetime income begins. The benefit rider supports an allowed annual distribution amount for the lifetime of the annuitant, or annuitants in the case of a joint contract. Ultimately, while the underlying contract value of assets remains positive, retirees are spending their own money. The insurance company then pays from its own resources after the contract value depletes. Contract value depletion is what eventually triggers annuitization.

First consider the growth process for the guaranteed benefit base during the deferral or accumulation period before distributions begin. This growth is important because it is subsequently used to determine the amount of guaranteed lifetime income provided by the annuity. The deferral period can be skipped if the retiree starts lifetime distributions immediately.

There are two general ways that lifetime income benefits can grow in a deferral period before the lifetime income commences. The first is a more complicated method that includes a benefit base, a rollup rate, and the possibility for step-ups. Deferred annuities with income guarantee riders generally support the ability to lock-in a guaranteed growth rate on the benefit base during the accumulation period, and also offer the ability to define the benefit base as the high watermark of the contract value of the underlying assets on anniversary dates if that growth is higher than the guaranteed rate. The benefit base is a hypothetical number used to calculate the amount of guaranteed income paid during the withdrawal phase. It is distinct from the contract value of assets, which is what the owner could access based on actual account growth net of fees and any surrender charges.

For this method, a guaranteed lifetime withdrawal benefit rider supports an income for life at a fixed withdrawal percentage (based on the age when distributions begin) of the guaranteed benefit base. It initially equals the premium paid into the annuity, which is also the initial contract value for the assets. Over time, the contract value of assets can rise or fall depending on realized investment returns and as fees and distributions are taken from the asset base. On any contract anniversary, if the contract value of the underlying assets has reached a new high watermark and exceeds the guaranteed benefit base, that base is stepped up to the new high watermark value. This increases the subsequent amount of guaranteed income. During the deferral period before distributions begin, an annuity may also offer a guaranteed rollup rate to increase the benefit base automatically over time if the value of the underlying contracted assets has not otherwise grown larger on its own. Generally, the benefit base can grow at the higher of either a guaranteed rollup rate or the high watermark achieved through contract value growth.

There are two general ways that lifetime income benefits can grow in a deferral period before the lifetime income commences.

Roll-up rates are often misunderstood as guaranteed returns for the annuity. These rates do not impact the contract value of assets. Their role is only to determine the hypothetical benefit base that is combined with a guaranteed withdrawal rate to determine the guaranteed lifetime income. It is the interaction of these two components that matters.

At some point, the owner may stop deferring and turn on their lifetime distributions. If the retiree does not take out more than the guaranteed withdrawal amounts, guaranteed withdrawals never decrease, even if the account balance falls to zero. One exception to this is that some companies market a feature that allows for higher distributions when assets remain and lower distributions after assets deplete. The contract may be terminated at any point with the contract value of the remaining assets, net of any potential surrender charges, returned to the owner.

Deferred annuities generally make a distinction between distributions that are covered by the lifetime income guarantee rider, and one-time distributions that are not covered by the guarantee. Non-lifetime distributions may be allowed before guaranteed income begins. That distinction is important, as it would generally allow rollups to continue, as rollups mostly end once guaranteed distributions begin. As well, non-lifetime distributions beyond the guaranteed level are allowed after the guaranteed distributions begin, but this will reduce subsequent guarantees.

The deferral period ends once guaranteed lifetime distributions commence, beginning the distribution period. Guaranteed income will be set using an age-based guaranteed withdrawal or payout percentage rate applied to the value of the benefit base. The guaranteed withdrawal rate multiplied by the benefit base sets a guaranteed distribution amount supported for life, even if the contract value of the underlying assets is depleted. Guaranteed distributions may even increase through step-ups if new high watermarks are reached for the underlying asset base on the designated dates when this is checked.

For a simple example, a company might offer the following payout rates to single individuals based on the age that lifetime withdrawals begin: 4.5 percent for ages fifty-nine to sixty-four, 5 percent for ages sixty-five to sixty-nine, 5.5 percent for ages seventy to seventy-nine, and 6.5 percent for ages eighty and over. For couples, payout rates would generally be 0.5 percent less and would be based on the age of the younger person. For couples, another possibility could be that the payout rates remain the same as for singles, but that a higher fee is charged to support the guarantee over the longer expected joint lifetime. GLWB annuity payouts generally do not make a distinction between genders, which would provide benefit to longer living women relative to men.

There is another way that lifetime income benefits can be structured that moves away from the hypothetical benefit base and the rollup rate. This alternative approach is more commonly found with FIAs, while the method just described is more common for variable annuities. In the alternate formulation, a lifetime withdrawal percentage, which is still defined by age bands, is determined at the time the GLWB is added to the annuity. In this case, it is the age that the benefit is purchased rather than the age that income begins. Then, rather than using a rollup rate with a benefit base, there is a deferral credit that increases the withdrawal rate for each year that the owner defers the start of their lifetime income distributions. When lifetime distributions begin, they are set as a percentage of the contract value at that time, where the percentage is rising over time on account of the deferral credits.

For example, suppose a fifty-five-year-old purchases an FIA that includes this type of income rider. For this contract, the withdrawal percentage when purchased at fifty-five is 4.5 percent, and the deferral credit is 0.3 percent for each year that the individual delays the start of income. The individual plans to retire at age sixty-five, which would provide ten years of deferral. That would mean that the lifetime withdrawal percentage is 7.5 percent (4.5 + 0.3 x 10) of the contract value at that age. In this case, principal is protected only on a gross basis before the rider fee is applied at the end of each year. Principal would be protected in terms of zero interest being credited when the index lost value, but the optional benefit charge could then reduce the value of the principal.

Moshe Milevsky has described the separate presentation of rollup rates and guaranteed withdrawal rates as telling consumers the temperature in Celsius when individuals can only make sense of temperatures provided in Fahrenheit. In this case, what a retiree will understand is the amount of income guaranteed by the annuity. It may not be immediately obvious to someone whether an annuity with a 5 percent rollup rate and 5 percent withdrawal rate is better than an annuity with a 4 percent rollup rate and a 6 percent withdrawal rate.

Many consumers misinterpret the guaranteed growth rate on their benefit base as a guaranteed investment return, not realizing that it is the combination of a growth rate on the benefit base and the withdrawal rate applied to the benefit base that determine the level of guaranteed income. These two factors cannot be disentangled. A higher rollup rate combined with a lower payout rate does not necessarily leave consumers in a better position. For these reasons, the second deferral credit method is easier to understand and has a more direct correspondence to how the payout rate on a deferred income annuity increases with the length of deferrals.

Many consumers misinterpret the guaranteed growth rate on their benefit base as a guaranteed investment return, not realizing that it is the combination of a growth rate on the benefit base and the withdrawal rate applied to the benefit base that determine the level of guaranteed income.

With either method, the payouts on deferred annuities at different ages will generally be less than the payouts offered by an immediate annuity purchased at the same age. This can be expected since deferred annuities provide the advantages of liquidity and potential for upside growth in the guaranteed income. However, there can be exceptions. For instance, especially with a long deferral period, the insurance company can expect that some FIA owners will lapse and not take the guaranteed distributions from the FIA despite paying for the income rider. This takes the insurance company off the hook for making good on its guarantee, and through competitive pricing some of this benefit is returned to the other owners in the risk pool. With an income annuity, there is no flexibility and so no possibility for mistakes on the part of owners.

As well, one difference from VAs is that upside potential for step-ups with FIAs may be more limited. The interest crediting method might even prevent the possibility of a step-up during the accumulation period with the rollup rate and benefit base approach. This could happen when a cap on credited interest is less than the rollup rate, especially when the optional rider fee would reduce the net cap applied. With the distribution phase as well, the capped gains could be less than the guaranteed withdrawal amount plus the rider fee, preventing the possibility for step-ups. For this reason, greater focus with FIAs should be on their minimum guaranteed protections without necessarily thinking that step-ups will provide further increases.

The practical impact of the optional rider fee will be to reduce the contract value a bit more quickly leading to a lower death benefit than otherwise. But with the focus on income rather than accumulation, the rider fee is of secondary importance. The goal is not to find the lowest rider fee, as it would generally support a less generous guarantee, but to find the annuity that offers the most value through lifetime income to the individual for a given rider cost. When the individual survives long enough that the annuity contract value is depleted, the benefit continues to support lifetime income and the previous fee drag becomes irrelevant.

The income riders on deferred annuities provide the ability to receive mortality credits, which can reduce the asset base required to support a lifetime spending goal. The rider fees paid for the income guarantee provide insurance that the spending will be protected in case someone experiences a combination of either living too long or experiencing sufficiently poor market returns that they outlive their underlying investment assets and cannot otherwise sustain an income for life.

The income riders on deferred annuities provide the ability to receive mortality credits, which can reduce the asset base required to support a lifetime spending goal.

# Death Benefits

The standard death benefit for a deferred annuity is the greater of the contract value of any remaining assets at death, or the total premiums paid less distributions received by death. It is provided to the beneficiary. In addition to optional GLWBs (also called living benefits), deferred annuities also offer optional death benefit riders that create an opportunity for more than the standard death benefit. One should look carefully at these as they could be counterproductive for those focusing on getting the most guaranteed income from their variable annuity. For instance, a common death benefit rider could support a death benefit equal to the full value of the annuity premiums if at least one dollar remains in the contract by an advanced age. One must consider whether it is a wise choice if the focus is otherwise placed on maximizing the spending power afforded by an income guarantee, which can involve spending down the contract value completely to trigger the lifetime income protection. Nonetheless, retirees may consider these optional enhanced death benefits on deferred annuities as an alternative to life insurance for funding legacy goals.

## Deferred variable annuities generally have several types of ongoing fees.

1. The first relate to the **underlying funds expenses** that would be included with any mutual fund investment.
2. The second type of fee relates to **mortality and expense charges** for the insurance company.
3. A third type of fee that may exist in the short run are **contingent deferred sales charges** (or surrender charges) for those seeking non-lifetime distributions above the allowed levels in the early years of the contract.

# Fees

Providing a guaranteed lifetime withdrawal benefit is a risky endeavor for the insurance company. The insurance company is obligated to provide lifetime income payments at the guaranteed level if the underlying assets held within the annuity have been depleted. Variable annuities with living benefits require managing market risk in addition to longevity risk. For FIAs, because of principal protection, the rider fees for living benefits only need manage longevity risk. The greater the investment volatility and the higher the guaranteed withdrawals that the insurance company allows, the greater is the cost for creating a risk management framework to support that guarantee.

When people mention that annuities have high fees, they generally have variable annuities in mind. Deferred variable annuities generally have several types of ongoing fees. The first relate to the underlying funds expenses that would be included with any mutual fund investment. The only issue to consider here is whether the funds within the subaccounts have elevated fees due to the inclusion of 12b-1 fees in their expense ratios, and whether investment options available to the individual outside of the variable annuity also include 12b-1 fees. These fund fees are charged on the contract value of underlying assets.

The second type of fee relates to mortality and expense charges for the insurance company. These fees help to support the risk pooling and business costs of the insurance company as well as a basic annuity death benefit. These fees are also generally charged on the contract value.

A third type of fee that may exist in the short run are contingent deferred sales charges (or surrender charges) for those seeking non-lifetime distributions above the allowed levels in the early years of the contract. Surrender charges receive much of the criticism related to the fee levels for annuities. Deferred annuities are liquid in that they may be surrendered with the contract value returned as an excess distribution above the guaranteed distribution level. But in the early years of the contract, surrender charges may limit the portion that can be returned without paying a fee. For instance, surrender charges could work on a sliding scale basis starting at 7 percent in the first year the annuity is held, and then gradually reducing by 1 percent a year down to zero after the seventh year that the annuity is held. In this case, after the seventh year the surrender charges end, and the contract value will be fully liquid in all subsequent years. Deferred annuities are meant to be long-term holdings and surrender charges help to recoup the fixed set-up costs to the insurer for those who leave early.

Finally, optional GLWB riders or enhanced death benefits require an additional ongoing charge. Rider charges end after the account is depleted, though this is the source of lifetime protections. Rider charges can be confusing because they may be charged in three different ways. The most expensive option is to have the rider charged on the annuity's benefit base. As the contract value approaches $0, this will increase the rider cost as a percentage of remaining assets and work to deplete the contract value more quickly. Two other options include charging the rider on the contract value of assets and charging the rider on a declining benefit base equal to the benefit base less cumulative guaranteed distributions.

With these various fees, it is possible that total variable annuity fees could add up to more than 3 percent. This, along with surrender charges, is how variable annuities have developed a reputation as being a high-cost product.

We can compare this to fixed index annuities, or fixed annuities more generally. FIAs with living benefits do not require market risk management since principal is protected and the general account of the insurance company is designed with asset-liability matching. Only longevity risk must be managed with the rider fees. FIAs also differ from VAs in that, as with an income annuity, FIA fees tend to be structured internally to the product such that there are no observable fees to reduce the contract value. Fees can be kept internal because they are based on a spread between what the insurer earns on the assets and what it pays out. The insurance company earns more from investing the premiums than it pays to the owner. As with income annuities, it is also possible to reverse engineer and estimate the internal costs and "money's worth" for an FIA. This process does get more complicated because financial derivatives are being used behind the scenes to provide exposure to market upside. Internal fees are reflected through the limits placed on the upside growth potential. Of course, upside growth potential must be limited to support the downside risk protections. The internal fees for the FIA just mean that upside growth potential is less than it could have been if the insurance company did not need to cover its expenses and profit needs.

At the same time, though, households may not be able to earn the same rates of returns on their funds as an insurance company that obtains institutional pricing on trades, improved diversification, and longer-term investment holding periods. The living benefit also provides risk pooling and mortality credits. It is not always the case that households could easily replicate on their own what the FIA provides as an accumulation tool even before adding the longevity protection.

FIAs do not have subaccount charges or mortality and expense charges. The exceptions to the lack of external fees include that FIAs may still have a surrender charge schedule in the early years for excess distributions. This is done to allow the insurance company to invest the premium in longer-term assets and to cover the company's fixed expenses for providing the annuity. These surrender charges will gradually disappear for long-term owners. As well, any optional lifetime income benefits or enhanced death benefits added to the contract have observable fees that will be deducted from the contract value. Though otherwise protected, the contract value of the FIA could decline on a net basis after accounting for optional rider fees.

# Fitting Annuities into a Retirement Plan

A retirement income strategy can extend beyond traditional investment management to also use insurance and risk pooling with annuities as a part of managing the changing risks of retirement. The process of building a retirement income strategy involves determining how to best combine retirement income tools to optimize the balance between meeting your retirement goals and protecting those goals from the unique risks of retirement. Retirement risks come in many forms, including unknown planning horizons, market volatility, inflation, and other spending shocks. Each of these risks must be managed by combining different tools and tactics, each with different relative strengths and weaknesses.

Retirement spending goals can be met through distributions from the investment portfolio, through annuitized income annuities, and through lifetime distribution provisions from deferred annuities. Product allocation is about how to combine these different tools into an overall plan. With this approach to retirement risk, it becomes hard to counter the notion that risk pooling and insurance have an important and valuable role to play. But this still leaves many questions about what type of annuity to use and what specific contributions an annuity can make.

## Retirement spending goals can be met through

- distributions from the investment portfolio
- annuitized income annuities
- lifetime distribution provisions from deferred annuities

# Filling an Income Gap with an Annuity

A common question about annuities is how much should be allocated to them. The question is often framed as though the annuity is another asset class in an asset allocation problem. What is the right asset allocation between stocks, bonds, and annuities? A better way to approach this question is to ask how much annuity income is needed to meet the longevity (and potentially lifestyle) retirement expenses.

The Retirement Income Optimization MapTM (RIO MapTM) framework described in Chapter 3 provides a summary for how to approach retirement income. Retirement assets are matched to the liabilities connected to the four L retirement goals (longevity, lifestyle, legacy, and liquidity). Assets are positioned in three general categories: reliable income resources, the diversified portfolio, and reserve assets. Reliable income includes Social Security and pension benefits, individual bonds, and different types of annuities providing lifetime income protections. The diversified portfolio is the traditional investment portfolio and can also include life insurance for matching to a legacy goal or for coordinating with investments to cover spending. Reserves are remaining assets that have not been earmarked to cover other goals and are truly liquid and available to help support retirement contingencies.

With this framework, the amount of portfolio assets to earmark as an annuity premium is based on how much is needed to support at least the longevity goals after accounting for the other reliable income resources. For example, suppose an individual reaches retirement with $1 million in an IRA and a $30,000 Social Security benefit. This retiree seeks to spend $70,000 per year, of which $45,000 is deemed as essential expenses. After Social Security, there is a $15,000 gap for reliable income. Suppose the retiree is considering an annuity with a 5.78 percent payout rate for lifetime income. The cost of filling the income gap is the $15,000 gap divided by 0.0578, which is $259,516. This represents 25.9 percent of portfolio assets, and it would serve as the starting point for analyzing the annuity allocation decision. The retiree must evaluate whether this is a reasonable portion of the overall asset base to devote toward an annuity. To make the decision more precise will require tax considerations as well as a strategy for managing inflation for the spending goal. But this process is the easiest and most practical way to think about allocating assets to annuities with income protections.

# Upside Exposure, Downside Protection, and Liquidity Provisions

Given a targeted amount of annuity income, the next question becomes what type of annuity to use: income annuities, variable annuities, or index annuities? Each provides a different balance among the tradeoffs between upside potential, downside protection, and liquidity provisions.

As a simple starting point, income annuities, when treated as bonds, will frequently be the most efficient way to incorporate lifetime income into a plan. This was a conclusion I have reached when exploring the efficient frontier for retirement income where I look at performance of various combinations of asset classes and annuities. I found that stocks and income annuities replace stocks and bonds on the efficient frontier for retirement income planning. The efficient frontier is about the tradeoffs between risk and return and finding asset and product allocations that cannot provide greater advantage for one without creating loss for the other. For retirement, that involves the trade-off between satisfying spending goals for life and preserving financial assets for legacy and liquidity. Deferred annuities with lifetime income provisions also tend to beat bonds for retirement income because of the mortality credits they provide to help support spending in the event of a long retirement.

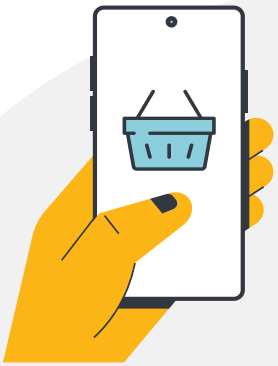
In practice, it is uncommon to find someone who is comfortable with the combination of a life-only income annuity and very aggressive asset allocation for the remainder of the investment portfolio. The math shows this to be the most effective combination, but it is not the most palatable as retirees have concerns about both life-only annuities and high stock allocations for the rest.

Deferred variable annuities and fixed index annuities play a role for those attracted to the upside and liquidity features they offer compared to income annuities. In some circumstances, they may even make it to the efficient frontier of options by providing higher protected income levels or a better overall asset allocation for retirees struggling with the concept that income annuities should replace bonds. Deferred annuities also offer greater flexibilities for the income start date and the opportunity to exchange into a different annuity or even no annuity in the future, as there is less lock-in when the contract has not been annuitized.

In practice, it is uncommon to find someone who is comfortable with the combination of a life-only income annuity and very aggressive asset allocation for the remainder of the investment portfolio.

In theory, simple income annuities should offer the highest guaranteed payout rates. Their simple design lacks any special features like liquidity and upside potential that require additional cost. The income annuity can offer the most downside protection but no upside potential. Even though that downside benefit may be less, an important selling point of deferred annuities is that they potentially provide more than just a minimum guaranteed withdrawal benefit. More generally, fixed annuities should offer higher guaranteed withdrawals than variable annuities because fixed annuities do not need to manage market risk in addition to longevity risk. With principal protection, the worst-case scenarios for fixed annuities can be known. FIAs will fall in between income annuities and variable annuities both in terms of their downside protections and upside potential. Variable annuities will require the greatest costs to provide protection, since they also manage market risk, and this will generally lead them to offer the least downside protection in terms of guaranteed lifetime withdrawal benefits. But competitive variable annuities will provide the most upside potential, especially with lower costs, higher quality investment choices, and investment freedom to choose an aggressive asset allocation.

Generally, as just described, accepting less upside potential allows for the possibility of more robust downside protections. But there can be exceptions. FIAs can occasionally have higher guaranteed payout rates than income annuities, as deferred annuities provide discretion to owners to make irrational decisions. Not everyone takes advantage of distributing the full allowed guaranteed amounts from deferred annuities, which reduces the odds for the contract value to deplete and eases pressure on the insurer. Through competition, this can lead to a higher payout rate on the living benefit for an FIA. There can also occasionally be exceptions in which variable annuities can offer comparable guarantees to fixed annuities, particularly in cases where the VA may have very limited bond subaccount options for investments that lead to less downside risk. Indeed, the type of annuity offering the most guaranteed income can vary depending on household characteristics, the length of deferral, and potential future changes in pricing and product offerings. **Shopping around between different types of annuities to obtain the best deal available at any given moment is a worthwhile endeavor.**



Shopping around between different types of annuities to obtain the best deal available at any given moment is a worthwhile endeavor.

This provides a framework for choosing between annuity types. It is worthwhile to first investigate what the guaranteed income levels are with different annuities at the targeted retirement date if purchased today. The annuity offering the most guaranteed downside income then becomes the baseline. Then consider whether there are additional reasons to choose a different annuity with less guaranteed income but with attractive liquidity provisions, upside growth potential, or even a better death benefit. When comparing deferred annuities with income annuities, including a cash refund provision for the income annuity would provide the closest approximation to the standard death benefit of deferred annuities. The difference in worst-case guaranteed income levels from different annuities reflects the effective cost of these other features. Especially, with upside, if growth potential is achieved for deferred annuities, then step-ups may be realized, and lifetime income could be higher than the minimum guaranteed level.

With the investment options and annuity features, how likely is it that the contract value can grow, and how important is it to the retiree to maintain the liquidity provided by the contract for those assets? About liquidity, we must remember that deferred annuities may not provide true liquidity if those assets are earmarked for income because excess distributions beyond the guaranteed amount will reduce the subsequent amount of guaranteed income provided. One application of deferred annuities, though, is to pay for the income protection to manage sequence risk and then if sequence is not realized in the early retirement years, one may decide to drop the guarantee from their plan. If a retiree values this liquidity and optionality about changing the decision later, then comparing the amount of guaranteed income lost to provide the liquidity (and upside) helps to quantify the tradeoff for the decision between income annuities and deferred variable annuities with income guarantees.

To summarize, but with a reminder that there are exceptions to these trends, the variable annuity maintains a contract value that can rise and fall with the markets, creating more upside potential and downside risk than other annuities. The fixed index annuity offers upside potential and liquidity, but generally less upside potential than a variable annuity and less minimum guaranteed income than an income annuity. It falls in the middle. Income annuities do not offer liquidity or upside, but they are usually the most efficient way to secure a stream of protected lifetime income with the least amount of assets. The idea would be to then use other non-annuity assets as the source for liquidity and upside, which leads to the next section.

# Annuities, Asset Allocation, Legacy, and True Liquidity

The next important detail is deciding which investment assets should be sold to fund the annuity purchase. The potential benefit from annuities depends in part on how they are treated as part of asset allocation. Annuities have a better chance to work when they are treated as a bond and funded through the sale of bonds. Annuities become a bond replacement. That is the idea of the efficient frontier for retirement income mentioned in the previous section: stocks and annuities, instead of stocks and bonds. Over the long term, this can lay the foundation for greater legacy and liquidity for the retirement plan after also providing a stronger foundation to meet spending goals.

Annuities are not the intended source for legacy or liquidity. Income annuities do not provide liquidity or legacy without adding provisions which reduce the value of their mortality credits. As well, for deferred annuities with income benefits, the point is to use these assets to support spending and the liquidity and legacy potential of the assets is of less importance even though it may be a behavioral selling point for the annuity. These assets can be spent down because they continue to provide income even after they are depleted, and this can provide relief for other non-annuity assets to have less commitment to funding spending and more opportunity to grow.

There is more to the story about liquidity and legacy as relates to how an annuity fits into an overall plan. Often the discussion around annuities frames the matter incorrectly, as if it is an all-or-nothing decision. Partial annuity allocations let us think about how we allocate assets toward meeting different goals.

There is more to the story about liquidity and legacy as relates to how an annuity fits into an overall plan. Often the discussion around annuities frames the matter incorrectly, as if it is an all-or-nothing decision. Partial annuity allocations let us think about how we allocate assets toward meeting different goals.

Annuities will work best when their owners view them as part of the “bond” allocation for retirement, so that overall stock holdings do not decrease with a partial annuity strategy. To keep the value of stock holdings the same, this does suggest that the stock allocation will be higher for the remaining portfolio assets outside the annuity. While this can cause some behavioral concerns, treating the annuity as a bond is justified.

In the discussion about “optimal withdrawal rates” from the previous chapter, we noted that for someone who worries about outliving his or her portfolio, does not have much additional income from outside the portfolio, mostly faces fixed expenses without much room to make cuts and does not have much in the way of backup reserves, it may be necessary to spend and invest quite conservatively to achieve a high probability of plan success. This individual has less capacity to bear financial market risk because their lifestyle is more vulnerable to a market downturn. In an investments-only world, such individuals would look to using a lower stock allocation and a lower spending rate.

Meanwhile, someone who has less fear about outliving his or her portfolio, has additional income sources from outside the portfolio, has the flexibility to cut portfolio spending without adversely impacting the living standard, and has sufficient additional reserves, a higher spending rate and more aggressive asset allocation could be quite satisfactory and optimal. Repositioning a portion of assets into an annuity offering lifetime income protections will contribute to better achieving these characteristics.

First, reliable income is increased through the annuity. More of the spending goal is now covered by reliable income assets that are not exposed to downside market risk. I use the term GRIP, or Guaranteed Retirement Income Percentage, to describe this concept. When the GRIP increases, more of the total spending budget is covered by resources with lifetime protections. This reduces the harm of investment portfolio depletion because more retirement spending is available outside the portfolio. With less exposure to downside market risk, the retiree has greater risk capacity and can rest more easily with a higher stock allocation for what remains. Adding protected lifetime income provides a stronger GRIP on retirement.

Second, for those with longevity risk aversion who are planning for a retirement lasting beyond life expectancy, using annuities with lifetime income benefits can mean that the present value of annuity benefits in the financial plan is greater than the annuity cost. With this subjective view toward longevity, the annuity asset is worth more than the premium, and this increases the funded ratio for the plan. Though the annuity does not increase plan assets in the objective sense, it does increase assets in the subjective sense that the plan is aiming to work to an advanced age, and people who live longer will receive more from the annuity. The remaining portfolio is available for more discretionary uses since the mortality credits of the annuity are covering more of the spending goal in the long run. The retirement is more secure, justifying a higher stock allocation for the portfolio piece of the asset base.

The third factor is the availability of reserves. What other resources are available that have not been earmarked to manage spending and can be used to cover contingencies? Having more reserves available means less reliance on the assets covering other goals to outperform and to create reserves through market gains. By helping to meet spending goals with less assets, the annuity creates additional reserves that provide true liquidity. With this added flexibility, the retiree can feel more comfortable with the aggressive asset allocation because there is less exposure to the possibility of having to sell assets at a loss to cover contingencies, and then not having enough left to cover other subsequent spending needs.

Repositioning a portion of assets into an annuity offering lifetime income protections will contribute to better achieving these characteristics.

Finally, traditional risk aversion is the countervailing force for all of this, and this is the factor that may receive the most attention. Though the investment portfolio is a smaller portion of the overall asset base after some of it is sold to purchase the annuity, the retiree must still be comfortable with the greater short-term portfolio volatility that a more aggressive asset allocation will imply. Conceptually this is justified, as we have discussed. But the retiree must accept and understand these points to avoid the potential of panicking and not following the strategy during market downturns. An income annuity is still an asset even though it does not appear on the portfolio statement. To be effective, retirees should view the annuity as part of their bond holdings and adjust their portfolio accordingly. This is also an area where deferred annuities can help with the psychology behind holding annuities. If retirees cannot overcome the psychological hurdle to adopt a higher stock allocation after adding an annuity, the likely outcome will be a reduction in their overall allocation to stocks, which will undermine the effectiveness of a partial annuity strategy.

If retirees cannot overcome the psychological hurdle to adopt a higher stock allocation after adding an annuity, the likely outcome will be a reduction in their overall allocation to stocks, which will undermine the effectiveness of a partial annuity strategy.

To better make this case, we can also discuss why annuities are "bond" like in their characteristics. First, income annuities provide bond-like returns with an additional overlay of mortality credits. The insurance company providing the annuity is investing those funds primarily in a fixed-income portfolio. For someone wishing to spend at a rate beyond what the bond yield curve can support, bond investments will essentially ensure that the plan will fail. Income annuities are actuarial bonds. They provide longevity protection which is unavailable with traditional bonds. Income annuities are like a bond with a maturity date that is unknown in advance, but which is calibrated and hedged specifically to cover the amount of lifetime spending needed by retirees.

Likewise, fixed index annuities that are linked to stock indices will also be more effective for those who treat them as part of their bonds. With principal protection, FIAs have less downside risk than either stocks or bonds. Bonds, of course, can experience capital losses when interest rates rise. But can enough upside be captured with the FIA to beat either stocks or bonds on a risk-adjusted basis? Though the interest they credit may be linked to a stock index, the returns on FIAs will be closer to bonds than to stocks. Owners should not think about FIAs as an alternative to owning stocks but rather as another option for fixed-income assets that protects principal and has the potential to outperform bonds when considered net of taxes and fees. With their principal protection, retirees may even consider increasing their stock allocation when replacing bonds with an FIA. The point is that FIAs provide returns comparable to bonds and can be treated as such even when linked to a stock index.

For variable annuities, the discussion is more complex as these annuities allow for stock investments to be held in the subaccounts. But when providing for lifetime spending, the guaranteed living withdrawal benefit serves as a "put option" on the stock market. Put options are financial derivatives that provide upside exposure while protecting from downside risk. When the stock market drops, even though the contract value declines, a GLWB protects lifetime retirement spending from this downside risk. This can allow retirees to feel more comfortable increasing their stock allocation in the variable annuity relative to an unprotected portfolio, or to otherwise view the variable annuity as a bond-like asset when framing retirement risk as the ability to meet financial goals rather than the underlying volatility of assets.

Moshe Milevsky and Vladyslav Kyrychenko have provided research based on over one-million variable annuity policy holders showing that those with optional income guarantees were willing to have about a 5 percent to 30 percent higher stock allocation than those without guarantees on their variable annuities. For instance, someone willing to hold 30 percent stocks without a guarantee may increase their stock allocation to between 35 percent and 60 percent with an income guarantee in place. This demonstrates an understanding and willingness in practice to view stocks held inside the variable annuity as being less "risky" to spending goals.

Having the income guarantee supported with actuarial bonds increases the risk capacity of retirees, as their retirement standard of living is less vulnerable to a market downturn. This can provide the capacity to use a higher stock allocation when a guarantee is in place, both inside and outside of a variable annuity. This works inside the variable annuity because the income guarantee protects income on the downside while still offering upside potential. Outside the variable annuity, the income guarantee reduces the harm created if portfolio assets deplete, providing increased risk capacity.

There are situations when variable and index annuities might help to achieve more efficient outcomes in retirement in terms of the combination of spending and legacy over retirement portfolios without a variable or index annuity component. These relate to asset allocation and whether it may change when an income guarantee is in place. Income guarantees provide greater relative benefit to retirees who are either willing to invest more aggressively because of the guarantee, or who would otherwise be uncomfortable using stocks in retirement.

Those who accept the notion that the income guarantee increases risk capacity and are willing to use a more aggressive asset allocation than otherwise both inside and outside of the annuity, could find that the additional exposure to the stock market equity premium more than offsets the annuity fees when markets perform well in retirement. The guarantee is also valuable if it otherwise stops retirees from panicking and selling stocks after a market drop. And when markets perform poorly, by paying an insurance premium for the income protection, one should anticipate depleting the underlying asset base sooner than with a lower-cost, investments-only strategy. But because the annuity still includes a lifetime guarantee, retirement spending will be supported after assets deplete.

Variable and index annuities could also create better outcomes for those who would simply use a lower stock allocation no matter the chosen retirement strategy, but who are unwilling to sacrifice the liquidity foregone with an income annuity. With a low stock allocation, investment assets are more likely to deplete, as there is only so much spending that bonds can support. The annuity provides the opportunity to continue with income for life even after the contract value of assets is gone. Without exposure to the risk premium, the contract value of underlying assets is more assured to deplete in the event of a long retirement. With investments-only, asset depletion ends the ability to spend, but an income guarantee assures this continued spending ability for life.

When allocating from bonds to annuities with lifetime income protections in the retirement income plan, the risk pooling from annuities can lay the foundation for more legacy (at least after life expectancy) and liquidity in the financial plan. In early retirement, legacy will naturally be less with partial annuitization or with a deferred annuity with surrender charges. But for conservative spenders where the payout rate from the annuity is higher than the initial withdrawal rate, with partial annuity use there is less pressure on the portfolio in the early retirement years. This allows non-annuity assets to grow more over time as mortality credits reduce the need to spend these other investment assets. The remaining investment assets may eventually grow to catch up with where an investments-only strategy would have been at about the life expectancy. Beyond that age, the increasing role for mortality credits allows the partial annuity strategy to get further ahead with legacy compared to an investments-only strategy.

When retirement is short, partial annuity strategies often lead to a smaller legacy, though the remaining legacy from investment assets is still reasonably large. For longer retirements, partial annuity strategies provide sound spending support while also fortifying a larger legacy. By requiring less assets to meet spending, risk capacity increases and the withdrawal rate from remaining assets decreases. Non-annuity assets can grow with less sequence risk, creating better long-term opportunities for legacy. Short-term sacrifice supports long-term gain.

As for true liquidity in the plan, consider a couple who believes that the 4 percent rule serves as an appropriate guide for their retirement spending. They seek to spend $40,000 per year with inflation adjustments, and they have $1 million invested in stocks or bonds through their brokerage account. Does this couple have any liquidity? Yes, technically, since they do have $1 million of liquid financial assets. But in a meaningful sense, this couple does not have liquidity. They are not free to use that $1 million for other purposes. The full amount must be tied up to support their spending objectives. An investment portfolio is a liquid asset, but some of its liquidity may be illusionary if those assets are already earmarked for specific goals. This distinction is important because there are cases when tying up a portion of assets in something illiquid, such as an income annuity, may allow for the household liabilities to be covered more cheaply than could be done when all assets are positioned to provide technical liquidity.

Many real-world retirees end up earmarking more assets than necessary to support income, and therefore spend less than possible because there is no guarantee component with investments, and they worry about outliving their assets. In simple terms, an annuity with lifetime income benefits that pools longevity risk may allow lifetime spending to be met at a cost of twenty years of the spending objective, while self-funding for longevity may require setting aside enough from an investment portfolio to cover thirty to forty years of expenses. The amount to be set aside with investments grows with the longevity risk aversion of the retiree. Because risk pooling allows for less to be set aside to cover the spending goal, there is now greater true liquidity and therefore more to cover other unexpected contingencies without jeopardizing core-spending needs. True liquidity will be larger whenever the payout rate for the annuity is greater than the determined "safe" withdrawal rate from investments as based on the retiree's risk aversion. As this will be the case for risk averse retirees who plan for living longer than average while earning below average portfolio returns, allocating to an annuity to cover an income gap can create more true liquidity for the overall retirement plan. Risk pooling and mortality credits allow for less to be set aside to cover the spending goal, creating greater true liquidity to cover other unexpected contingencies without jeopardizing core spending needs. Liquidity, as it is traditionally defined in securities markets, is of little value as a distinct retirement goal. The distinction between technical and true liquidity is important.

Many real-world retirees end up earmarking more assets than necessary to support income, and therefore spend less than possible because there is no guarantee component with investments, and they worry about outliving their assets.

It is important to frame the issue of variable annuity fees in terms of the potential value the variable annuity can provide to a retirement income plan. Variable annuities may have higher ongoing charges than non-annuity investment portfolios, but a portion of those fees are to pay for the assurance of a lifetime income in the face of longevity and market risk.

# Inflation Risk Management and Annuities

A common question about annuities relates to inflation protection and whether it should be incorporated into the annuity. We can distinguish between whether the retiree needs the annuity to provide inflation protection and whether the retiree wants the annuity to provide inflation protection. With a lower payout rate, an income annuity providing income growth and inflation protection will require a larger premium to build up the same initial spending power. Alternatively, the same premium amount will buy less initial income when this income grows over time. Obtaining inflation protection means trading less spending early on for more spending later. Likewise, many deferred annuities with GLWBs may offer the potential for step-ups to keep pace with inflation, but retirees should recognize that the probability this will happen could be low as the retirement gets longer.

The tradeoff is that with level annuity spending, the remaining investment portfolio must also cover the subsequent inflation adjustments that the level annuity does not provide. Less can go into the annuity initially, leaving more in the portfolio, but the subsequent demands on the portfolio will be greater to also cover the missing inflation adjustment for the annuity portion. As it turns out, the lower withdrawal rate from investments can help assets to grow and to manage sequence risk, such that the higher spending need later in retirement can be more effectively managed. For this reason, I do not think it is necessary to include inflation protection into the annuity. I think that the common concern about annuities not providing inflation protection is framing it as an all-or-nothing decision, rather than recognizing that the annuity facilitates the use of other non-annuity assets as a source of inflation protection.

"I think that the common concern about annuities not providing inflation protection is framing it as an all-or-nothing decision, rather than recognizing that the annuity facilitates the use of other non-annuity assets as a source of inflation protection."

**- Wade Pfau**

Meanwhile, the decision about whether the retiree will want inflation protection for the annuity is a different matter. Some worry quite a bit that inflation will be much higher in the future than it is today. The possibility of high inflation would make the inflation-adjusted annuity a more attractive choice. At the present, CPI-adjusted annuities are not available, and having a fixed COLA will not really help with an unexpectedly high inflation rate. If CPI-adjusted annuities were available, the retiree must decide whether it is worth paying the additional cost to obtain contractually protected lifetime inflation-adjusted income beyond what Social Security provides, or whether to instead use a lower initial premium to obtain level income from the annuity. The retiree can then try to manage the inflation risk through the investment portfolio and through the synergies of reducing sequence risk by being able to use a lower distribution rate from the remaining investments. While there is a risk because there is not an asset specifically linked to inflation, my research suggests that the latter approach is generally worthwhile.

One additional important point about this discussion is that it has presupposed that retirees desire their overall spending to consistently keep pace with inflation. The reality is that the inflation-adjusted spending for many retirees can be expected to decline with age. Other income sources, such as Social Security, will adjust their benefits with inflation. And as partial annuity strategies mean that only a fraction of overall income is provided by the annuity, it may be the case that an income annuity with level payments will match the spending needs of real retirees more precisely. In other words, having those inflation adjustments may not even be necessary in many cases. If retirees do find that their inflation-adjusted reliable income is falling short of their longevity spending goals, it is always possible to ladder in additional annuities to support more reliable income.

The reality is that the inflation-adjusted spending for many retirees can be expected to decline with age.

# Framing Annuity Fees

We have described the fees for different types of annuities, and it is worth returning to this issue. As we noted, fees for fixed annuities are often less and are based on spreads between what the insurer can earn on the assets and what is credited as interest. They must be reverse engineered since there are not always explicit fees beyond those on optional benefits.

This discussion is mostly about variable annuities. Their fees are often presented as one of the biggest objections to annuities, and sometimes fixed annuities get caught in that crossfire. Variable annuities have generally come under attack for the higher internal costs relative to an unprotected investment portfolio.

It is important to frame the issue of variable annuity fees in terms of the potential value the variable annuity can provide to a retirement income plan. Variable annuities may have higher ongoing charges than non-annuity investment portfolios, but a portion of those fees are to pay for the assurance of a lifetime income in the face of longevity and market risk.

It may be easiest to think about the fee issue by comparing to simple income annuities. Income annuities do not include transparent fees, as the fees are internal to the product and the payout rate is provided on a net basis. Money's worth measures can be used to back out the implied fees for an income annuity. But if we frame the income annuity in the same way as a variable annuity, we conclude that the income annuity has a 100 percent fee at the time the contract is signed, and the premium is paid. Once an income annuity is purchased, assets are relinquished to the insurance company and will be inaccessible at any point in the future when the annuitant remains alive (there could be a cash refund provision at death). There is no contract value.

In contrast, deferred variable annuities provide liquidity through the contract value. Variable annuity liquidity allows for the guarantee to be ended at any time, returning any remaining assets. Excess distributions are allowed with a proportional reduction to the guarantee. The fee drag will work to gradually reduce the contract value over time rather than eliminating it immediately.

In practice, we do not describe the income annuity as having a 100 percent fee. Rather, we focus on the role its guaranteed income can play in the overall financial plan. Variable annuities maintain a contract value which has a higher cost associated with it, but the focus should be on how much must be earmarked to fund different retirement goals. With risk pooling, an income rider may allow fewer assets to be earmarked to meet retirement spending needs, which supports the annuity's value proposition. Also, if fewer assets are needed to comfortably meet the spending goal, then even a higher fee drag on a smaller asset base may not lead to more overall fees.

More broadly, in the context of the retirement income plan, focusing on the internal costs of a variable annuity is not the best way to frame the problem we are attempting to solve. Is an investments-only strategy with lower internal fees preferable if that approach to managing longevity and sequence risk translates to spending less or delaying retirement? That is the context in which to assess fees: can they support better outcomes through risk pooling that reduce the overall costs of the plan in terms of the asset base required to meet the financial goals of retirement?

There is also another aspect of variable annuities related to asset allocation. If one maintains the same asset allocation both inside and outside of the variable annuity, then the additional fees for a variable annuity can be expected to deplete the underlying value of the assets more quickly than if they were held in an unprotected investment account with lower fees. However, this outcome changes since an income guarantee can support using a higher stock allocation within a variable annuity. In this case, when markets do well in retirement, the additional exposure to the risk premium can more than offset the higher costs of the variable annuity to allow for greater overall growth in assets. This can support greater legacy after meeting the same spending goal. If markets perform poorly in retirement, the additional costs within the variable annuity could cause depletion of assets sooner than otherwise. But with poor returns, the investments-only portfolio will be on track to depletion shortly thereafter. With the variable annuity assets, at least, the income guarantee continues to support spending after the contract value depletes. With investments-only, spending power ends. The simple argument that higher fees makes annuities unattractive is not the whole story.

If one maintains the same asset allocation both inside and outside of the variable annuity, then the additional fees for a variable annuity can be expected to deplete the underlying value of the assets more quickly than if they were held in an unprotected investment account with lower fees.

# Action Plan

For retirees who view annuities as a bond replacement and whose overall spending goal implies a lower withdrawal rate than the annuity payout rate, partial annuity strategies can increase success rates, raise the proportion of lifetime spending goals that can be covered, and improve legacy outcomes especially for those living beyond life expectancy, relative to an investments-only strategy. The mortality credits provided through risk pooling provide relief for the distribution needs from non-annuity assets, giving them more potential to grow. But not everyone will need or want an annuity. Some retirees may already have plenty of lifetime annuity income through Social Security and traditional defined-benefit pensions. The action items for determining whether and how to include annuities within your retirement income plan include:

**Assess whether your characteristics and preferences are aligned with obtaining greater value from an annuity.**

- Your RISA Profile suggests that your preferences align with income protection and risk wrap strategies.
- You have an income gap in which there is not enough reliable income to cover your longevity expenses.
- Your risk tolerance limits your comfort with stocks in retirement. The case for annuities is stronger for those with a lower stock allocation.
- You have greater longevity risk aversion. Concerns about outliving retirement assets lead to more relative benefits from annuities as the alternative is to spend even less from investments.
- You view annuities as a replacement for bonds and are comfortable using a higher stock allocation with remaining investment assets.
- You seek protection from making behavioral mistakes with your investment portfolio, you lack self-control for spending, or you find investments intimidating. Annuities may also protect less financially savvy family members.

**Learn about the features and mechanics of different annuities.**

- When comparing annuities for lifetime income, it is essential to first focus on the minimum guaranteed withdrawals for your purchase age and anticipated income starting age.
- Consider your preferences for tradeoffs between upside and downside, the desire for liquidity, and the types of asset allocations you would use both with and without income protections.
- Determine whether there may be an annuity option with other attractive features that make it worth accepting even if it does not have the strongest downside guarantees.

**Determine the income gap you are seeking to fill and decide whether the amount of assets needed to fill that gap with annuities is reasonable. Decide on a premium amount.**

**Take your time with making this purchase decision.**

- Discuss the decision with family members to coordinate both with the spouse and with any potential heirs.
- Work with someone who is familiar with the vast array of available annuities and understands which work better for different purposes, ages, and deferral periods.
- Make sure you understand how the annuity works with respect to its various features and fees.
- Understand how the annuity taxes work (see Chapter 10).
- Only add living or death benefits that you intend to use.
- Consider diversifying purchases between different companies and even different types of annuities.

# Further Reading

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