Research
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Briefs

ANNUITIES AND RETIREMENT INCOME PLANNING

- Although academic studies evaluate the optimality of annuities, advisers assess solutions in terms of contracts governed by insurance carrier profit objectives, tax code provisions, and regulatory restrictions.
- A variety of annuities exist and, for each type, there is substantial heterogeneity of contract provisions.
- Practitioners may benefit from an overview of the US annuity marketplace with respect to commonly used single premium, variable, and ruin-contingent annuities.
- The brief provides a "short course" on relevant opportunities, advantages, and cautions for each contract type.

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CFA Institute Research Foundation

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Annuities and Retirement Income Planning

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SUMMARY

This CFA Institute Research Foundation brief provides a broad-brush survey of the US annuity marketplace as of the end of 2014. It is a short and generic introduction to currently available annuity contracts. It is oriented toward both investors who are contemplating the use of annuities to generate income and hedge longevity risk and their advisers. It does not discuss the literature that evaluates annuities as instruments to enhance utility in the context of a life-cycle model or as benchmarks for monitoring and evaluating the health of a retirement income portfolio (these topics are covered in the CFA Institute Research Foundation literature review *Longevity Risk and Retirement Income Planning*). Nothing in this piece should be considered financial-planning advice for a specific type of investor or an endorsement of a particular product or strategy.

INTRODUCTION

Many investors have a passing acquaintance with two insurance-oriented products: the life annuity, which promises to pay a guaranteed income for the remaining life of the beneficiary,[1] and the reverse annuity mortgage, which promises to provide income—perhaps for life—secured by a lien against a personal residence. The life annuity has been around since the Middle Ages; the reverse annuity mortgage program first appeared in the 1980s in the form of a private insurance plan.[2] The reverse annuity mortgage involves

[1]The term *beneficiary* can mean a single individual or a beneficiary plus spouse. When the term encompasses two individuals, the lifespan measured is the joint lifespan. For purposes of expositional clarity, we assume that the annuitant, payer, and contract owner are the same.

[2]In the Middle Ages, merchants often traded personal wealth to local monasteries in exchange for the promise of lifetime support and protection for themselves and their families within the confines of the monastic institution. Many monasteries later found themselves in grave financial crisis because they failed to collect sufficient wealth to fund long-term obligations. The reverse annuity mortgage plans of the 1980s were initially privately insured. It was not until the early 1990s that the Federal Housing Administration initiated government involvement.

strategies to monetize an illiquid asset and merits a separate exposition. Therefore, this discussion focuses on the following actuarial products:

- The single premium immediate retirement annuity
- The single premium deferred retirement annuity
- The variable annuity with lifetime income guarantee rider
- The ruin contingent deferred annuity

The wide variety of annuity contracts and policy riders makes it difficult to formulate universally accurate statements about products that are actually available to consumers. Investors seeking to annuitize some or all of their wealth should engage a qualified adviser to represent their interests in the marketplace.

ANNUITY BASICS

Before looking at product types, it is helpful to review some basics. An *annuity* is a contract in which an insurance company promises to make a series of periodic payments—usually defined as a sequence lasting for life—in exchange for either a large single premium collected at the beginning of the contract's term or a series of smaller premiums collected before the start of the annuity's initial payment date. An annuity for which the entire premium is collected at the beginning of the contract's term and that begins payments shortly thereafter is called an *immediate annuity*.

The purchase of an immediate annuity involves an irrevocable sacrifice of capital in an amount equal to the premium paid to the insurance company. The purchaser trades a sum of money for an actuarially equivalent income stream, which, in turn, is reduced by the dollar amount of fees, commissions, and expenses charged by the insurance carrier. The lower the sales and administrative costs, the greater the periodic income (all else being equal). The insurance company invests the premiums to generate a return sufficient to cover its obligations and to earn a profit. Unless there is a special premium refund feature or payment guarantee provision in the annuity contract, the payments cease upon the death of the annuitant(s).

The basic annuity structure sometimes engenders misconceptions. One sometimes hears annuities described as giving your money to an insurance company that invests in the same stocks and bonds in which you could invest; and, because all payments cease upon death, allowing the company to reap a windfall because an early demise means that you forfeit your money to the insurance carrier. This *incorrect* description

of the actuarial principles that underpin annuities misses entirely the concepts of "risk pooling" and "mortality credits."

Consider this example. Assume that 11 80-year-old investors each contribute $1,000 at the beginning of the year so they can collectively purchase an $11,000 certificate of deposit (CD) that matures in one year and pays a simple rate of interest of 3%. Each investor expects to receive $1,000 in principal plus $30 in interest one year from today, for a total of $1,030. This calculation assumes that each member of the pool receives a pro-rata return from a CD with a total maturity value of $11,330.

Now, suppose the 11 investors decide that if any one of them fails to survive until the CD's maturity date, the share owed to that investor will be distributed to the remaining living members.[3] If one member fails to survive the requisite period, the remaining members divide the $11,330 CD proceeds into 10 shares, each of which is worth $1,133 (instead of $1,030). By pooling risk, the survivors have reaped a mortality credit of $103—an extra return of 10.3%. The deceased pool members forfeit their shares to the surviving members—not to the bank that issued the CD. The issuing bank paid a 3% interest rate, which was sufficient to attract capital that, in turn, was loaned out to other bank customers at a higher rate of interest. The bank's profit expectations are already built into the CD contract, and the bank remains indifferent as to the fate of individual pool members.

Similarly, an insurer guarantees the annuity payout for each contract irrespective of which annuitants—or how many annuitants—survive the requisite period. It can do so because of annuity-pricing principles. The insurer sets the payouts so they appear sufficiently lucrative to attract capital (premiums) and are sufficiently conservative to reserve a slice of the expected mortality credits for its profits.[4] Assuming reasonable fees and expenses, the annuity contract will always pay an annuity yield higher than the interest rates on comparable fixed-income investments that promise a full or partial return of capital to the investor.[5]

One further item is noteworthy: *An annuity is not a risk-free investment*. Annuity payout guarantees are only as good as the insurance company that backs them. Historically,

[3]To simplify the example, we describe the form of contract known as a *tontine*, which is illegal because it might encourage some participants to take steps to ensure the premature demise of other pool members. An insurance company, however, pools many individuals into contracts in which the death of any one member does not affect the payout promised to the remaining annuitants (i.e., there are no "death dividends" to reward the survivors). Moshe A. Milevsky provides an in-depth discussion of annuity-pricing principles in his monograph *Life Annuities: An Optimal Product for Retirement Income* (Charlottesville, VA: CFA Institute Research Foundation, 2013).

[4]Technically, profits and losses emerge over time as experience dictates whether the liability reserve for the annuity payments is conservative (profits) or inadequate (losses).

[5]It is misleading, however, to compare the annuity yield with the current yield paid by a bond or a CD. Bonds and CDs usually involve a return of principal, whereas the replicating portfolio for an annuity payout is a series of zero-coupon bonds with a 100% probability of eventual default. This is truly an oranges-to-apples comparison.

several insurance company insolvencies have resulted in annuity payment delays or even the loss of a portion of the investment in the contract when annuity payments ceased. Annuities are guaranteed only up to a limited value specified by state insurance guarantee funds.[6] Investors should also be aware that the financial guarantees are not a direct obligation of the state but, rather, are the pro-rata obligations of individual insurance companies that market within the state. Thus, it is probably more accurate to call these funds "other insurance company guarantee funds" rather than "state guarantee funds." Still, most investors do not even know these funds exist, and they do mitigate the risk of an annuity purchase.

An annuity has unique tax provisions that investors should carefully consider before making a purchase decision. Generally, an annuity enables the investor to avoid recognizing income on any accumulations remaining in the contract. Thus, it provides a "tax shield" that allows funds to accumulate in a tax-favored environment. Moreover, each periodic payment is split into a tax-free return of a principal part and a reportable income part. The tax characterization of periodic income follows a complicated set of rules enumerated in the US Internal Revenue Code.[7] The portion of income deemed taxable is subject to ordinary income tax rates. Once the aggregate return of principal exceeds the basis in the contract (i.e., the amount of premiums paid), all distributions are fully reportable as ordinary income. Proponents of accumulation-oriented annuities point to the advantages of the tax shield that allows the investment to grow on a tax-deferred basis. Critics of annuities—both accumulation annuities and immediate payout annuities—point to the tax law provisions that tax annuity investment gains at higher ordinary income rates than non-annuity investment gains, which are usually subject to low capital gains rates.

[6]In California, for example, the 2014 amount of contract "nonforfeiture" value that is covered under state guarantee fund provisions is 80% of the present value of annuity benefits, including net cash surrender and net cash withdrawal values up to a maximum of $250,000. The rules are complicated. Coverage may apply to each annuitant in a joint contract, benefits may be subject to interest rate adjustments, moving to another state may trigger different benefit levels, and so on. Although it is wise to diversify the annuity portfolio over several insurance companies unless the annuity is of a type that is segregated from creditor claims against the insurer, the California Life & Health Insurance Guarantee Association limits total coverage for any one individual to $300,000—assuming the annuitant owns contracts issued by multiple companies (see www.califega.org/faq.cfm). Independent rating firms upgraded the insurance industry outlook from "negative" to "neutral" following the recovery from the global recession. However, several carriers with a large share of the US annuity market have recently exited the marketplace because the financial guarantees embedded in annuity contracts threatened the carriers' financial condition. In the 1990s, both Japan and Europe saw multiple carrier insolvencies as mispriced guarantees thrust insurance companies into dire financial straits.

[7]The tax regulations for inflation-adjusted annuities differ in important respects from those applicable to nominal payout annuities.

THE SINGLE PREMIUM IMMEDIATE ANNUITY

The single premium immediate annuity (SPIA) is a contract that begins periodic payments shortly after collection of the initial lump sum premium payment—usually within 30 days. Assuming sufficient financial wealth, the attraction of an SPIA is the ability to lock in a lifetime payment stream, either in nominal terms or on a real (inflation-adjusted) basis. This type of transaction represents an exchange of risk, not an elimination of risk. That is, the annuity purchaser voluntarily assumes counterparty risk—the risk that the insurance company will be unable to honor its contractual payment obligations. The investor can lock in the lifetime income either upon the commencement of retirement—assuming sufficient funds—or at a later date if the investor prefers to wait and see how events unfold in the capital markets, assuming that sufficient wealth remains to cover the annuity's future purchase price.

Although there are many ways to use SPIA contracts to generate retirement income, most are variations on two basic approaches: (1) as a product to secure a base level of income or (2) as a safety net should investment results prove unsatisfactory.

1. The investor determines the minimum income required to sustain "threshold" (minimum) expenses during the investor's lifespan. This threshold may be less than the "aspirational" amount of income that the investor hopes to have available to spend. Nevertheless, the idea of locking in a threshold income amount at the start of retirement may appeal to certain investors. If the annuity contract is reasonably priced, the annuity's risk pooling and mortality credits make the attainment of lifetime income cheaper than the income stream available from government-guaranteed bond portfolios. In terms of financial economics, the annuity portfolio's pricing advantage "crowds out" the bond component of the portfolio. The portion of portfolio assets not used to purchase the annuity income stream may be invested in a risky-asset portfolio with the expectation of generating future capital growth.

2. An alternative SPIA strategy is to consider the annuity a safety net against a decline in wealth of such magnitude that it jeopardizes the portfolio's ability to provide a sustainable and adequate lifetime cash flow. Under this approach, the investor delays purchasing an annuity in hopes that traditional stock and bond investments will generate returns equal to or greater than those required to fund both threshold and aspirational consumption objectives. However, should the portfolio encounter a bear market of sufficient severity to compromise financial objectives, the investor can exercise the option to annuitize. The option to annuitize at an older age may make it

cheaper to purchase the annuity income, assuming that interest rates and insurance company reserving requirements are favorable at the time the option is exercised.[8]

Although the concept of guaranteed lifetime income is attractive, many investors never exercise the option to buy an SPIA. Given the annuity's pricing advantages relative to more traditional bond investments, economists refer to the lack of widespread public ownership of annuity products as the "annuity puzzle." Theory dictates that annuities should be popular; reality says otherwise. Roughly 45 years of research have been devoted to solving this puzzle. Many reasons have been put forth to explain why annuities are not more widely used:

- Distrust of insurance companies and insurance sales representatives
- Presence of a threshold inflation-adjusted income stream provided by Social Security
- Irrevocable loss of capital upon purchasing a lifetime income stream
- Importance of gifting and intergenerational bequest planning for retired investors, or the importance of a remainder interest in the context of an irrevocable trust
- Strong time preference for consumption, suggesting that current wealth should not be allocated to an annuity to provide long-term funds when there is only a remote contingency that income might be needed at age 99—or an *optimal* consumption strategy suggesting high early expenditures and lower expenditures later in life at a planning horizon with a lower survival probability
- Fear of such unexpected "liquidity shocks" as extraordinary medical expenses that would require large reserves of liquid capital
- Fear of locking in a permanent budget constraint if most wealth is exchanged for annuitized income
- Fear of ceding control of wealth, with the attendant loss of the ability to control discretionary spending

Clearly, the SPIA is a powerful financial tool, but any purchase decision must involve careful planning and informed consideration.

[8]It is cheaper to buy a lifetime income of x dollars at age 75 than at age 65, all else being equal. Generally speaking, the only investors who find SPIA contracts of interest are those who consider themselves to be in good health. If the investor does not expect to enjoy a long lifespan, longevity risk is a less important factor in lifetime income planning. A few carriers write SPIA contracts with high lifetime payouts for people in poor health. Actuaries call these contracts *substandard annuities*. When such annuities are customized to compensate people who have been awarded court judgments for life-impairing injuries, they are known as *structured settlements*. Structured settlements may also be available to people in good health who have won a lawsuit or lottery.

During times of lackluster economic performance, interest rates tend to be low. But these are precisely the times when the insurance industry highlights how yield-starved investors can capture attractive cash flows by buying annuities. Relative to the income currently thrown off by CDs and government-guaranteed bonds, an annuitized income stream seems almost too good to be true. However, the intelligent investor also realizes that when money is paid to the insurance carrier, the carrier must invest in the same low-yield capital markets faced by all investors. All else being equal, when interest rates in the general economy are low, insurance carriers do not offer the amount of lifetime income per premium dollar that they offer during periods of higher interest rates. After all, if the insurance carrier can earn only 3% on its assets in a poor economy, it cannot pay out as much as it can if its invested assets earn 6%. Yet it is during bad economies that annuities look best to those concerned with inadequate periodic income. In terms of timing, buying an annuity contract in a low-interest, recessionary economy is probably the worst time to do so, which is ironic—the product looks best at the worst time to buy it![9]

The annuity product provides lifetime cash flows and thus exhibits a higher interest rate sensitivity (bond duration risk) than that of many fixed-income investments. When considering the factors that contribute to the annuity puzzle, the fear of locking in a permanent budget constraint assumes great significance in light of expected changes in future interest rates. Buying a nominal annuity is equivalent to exchanging the risks traditionally associated with portfolios of financial assets for increased interest rate sensitivity. Beta risk is exchanged for duration risk in that the economic value of a remaining lifetime nominal income stream decreases with an increase in real interest rates. In addition, the annuity buyer incurs an opportunity cost because he could have secured a higher income by waiting.

THE SINGLE PREMIUM DEFERRED ANNUITY

The single premium deferred annuity (SPDA) is a relatively new annuity product offered by only a few companies. It is also known as an advanced life deferred annuity (ALDA). Unlike the SPIA, the SPDA provides a lifetime income that starts 10, 15, or 20 years after the payment of the premium—hence, the use of the term "deferred." Under this type of contract, the annuitant receives income only if he is alive at the future income start date. For example, suppose that a 65-year-old male investor elects to purchase a $20,000 income stream with a 2% annual benefit step-up. The income start date is age

[9]Holding constant the premium deposit amounts, age, sex, and annuity underwriting pricing formulas, changes in interest rates over time generate a "time series of annuity payments." For example, spending $100,000 to buy an annuity for a healthy 65-year-old female in 1995 buys a much higher lifetime income than a comparable annuity purchased for a 65-year-old in 2012.

85. If the investor is still alive at 85, he will receive a yearly income of approximately $30,000, with a continuing 2% annual step-up in benefits for the remainder of his life. However, if he is not alive on the designated start date, he will receive nothing.

Not surprisingly, these features result in significant cost reductions relative to an SPIA. For example, assume that a $40,000 annual income with a 2% step-up in benefits for a 65-year-old annuitant costs approximately $800,000 under an SPIA contract. The same income received under an SPDA starting at age 85 costs approximately $100,000—a cost reduction of $700,000, or 87.5%. The reason for the cost savings is threefold: (1) Only about half of the annuitants will be alive to collect the benefits, (2) the insurance company can invest the premium for 20 years before paying out benefits, and (3) the number of years of expected benefit payments is less at age 85 than at age 65.

This product may be attractive to investors with portfolios large enough to make it unlikely that they will face an income shortfall within the next 15–20 years. However, if the investor survives beyond this period, continued distributions may result in portfolio depletion. In our example, an investor with a $1 million portfolio needs to transfer $800,000 to the insurance company to secure a $40,000 annual income with a 2% annual benefit increase under an SPIA contract—which leaves only $200,000 for investments and emergency fund reserves. In contrast, the investor can purchase the comparable SPDA contract and retain $900,000 in financial assets. In this case, the risk is that the $900,000 will be insufficient to provide the needed income during the 20 years preceding the annuity's start date. Of course, there is also the risk that the investor will not live until age 85 and will not collect any benefits. However, the cost of off-loading longevity risk under an SPDA is much less than the cost of off-loading it under an SPIA.[10]

THE VARIABLE ANNUITY WITH LIFETIME INCOME GUARANTEE

This annuity product is by far the most widely owned type of annuity contract that provides a lifetime income. The variable annuity (VA) first appeared in the United States in the 1970s. VAs are "fund-linked" annuity contracts that usually require payment of a single, upfront premium when used for retirement income purposes. The insurance company offers the contract owner the right to invest the single premium in a menu of fund offerings consisting of proprietary funds or funds managed by one or more unrelated

[10]The SPDA's lower premium cost does not imply that the SPDA has lower expenses. Indeed, compared with an SPIA, an SPDA's load may be higher because the insurance company must protect itself against adverse selection—that is, only investors who expect to live a long time are likely to purchase a contract whose payout is contingent on living to an advanced age.

mutual fund companies.[11] The SEC considers VAs securities and requires insurance agents to hold the requisite security licenses and to provide investors with a prospectus.

One advantage of these products is that they are not deemed part of the insurance carrier's general assets and are thus not subject to creditor claims in the event of the insurer's insolvency. In the current marketplace, the investor can find both commission-based and no-commission products—the cost of which can vary significantly.[12] A second advantage is that VA contracts are liquid. Subject to applicable contract surrender charges, the investor does not irrevocably forfeit the funds to the insurance carrier. If sudden expenses arise, the contract can be surrendered, partly or entirely, to provide for the investor's needs.

The structure of these contracts is complex, and the actuarial formulas that determine payouts can seem byzantine. Basically, a VA contract is a series of one or more pooled investments comparable to mutual funds. The investor allocates the aggregate investment account across a menu of money market, bond, and stock funds. Occasionally, VA contracts offer more exotic choices, such as hedge funds, commodities, and so on. The aggregate account is "wrapped" in an annuity bundle so that it qualifies as an insurance product. This aspect is important because in its capacity as an actuarial instrument backed by an insurance company, the contract can offer the owner (1) the right to annuitize the fund-linked value of the investment account to provide for a lifetime income and (2) riders that provide additional financial guarantees for both minimum payoffs upon the annuitant's death and minimum dollar income benefits during the annuitant's lifetime.

Regulators (the SEC and NAIC[13]) approved the marketing and sale of VA products on the basis of carriers' assurances that the financial guarantees offered through annuity policy riders would be "incidental" and that such guarantees would not be sufficiently widespread to materially affect insurance company profitability. Insurance firms excel at pricing actuarial guarantees; pricing financial guarantees, however, is a much different ball game.[14] The NAIC is currently evaluating a new type of annuity contract—the ruin contingent deferred annuity (discussed in the next section)—and, to the consternation of

[11]The funds under management of outside investment companies may differ from the similarly named mutual funds offered to investors. For example, in some cases, the expense structure of the mutual funds may differ from that of the funds on the VA menu.

[12]The cost structure of VA contracts is complex and lies mainly outside the scope of this discussion. That said, cost matters—a lot. The prudent investor should thoroughly investigate the myriad of implicit and explicit costs associated with this product.

[13]The NAIC is the National Association of Insurance Commissioners. Insurance companies are regulated primarily at the state level, with the chief regulatory officer being the state insurance commissioner. The 50 state commissioners, in turn, belong to the NAIC, which acts as an advisory body regarding the need to keep or amend current regulatory standards.

[14]Recent events have seen such AAA rated firms as AIG Life and Hartford Life requiring federal bailout funds to survive the liabilities that emerged when their financial guarantees were suddenly in the money. Hartford Life, the company with the largest share of VA sales, exited the VA market.

several major VA carriers, is also taking the opportunity to reassess the risks and reserving requirements of a broad range of financial guarantees offered as VA contract riders.[15]

The basic VA contract offers the option to annuitize the investment account to provide a lifetime income. However, the amount of income is not based solely on the dollar value of the account. Rather, it depends on the complex interaction of two actuarial formulas: (1) the number of annuity units in the aggregate account (the value of an annuity unit rises and falls with market performance) and (2) the payout value of each annuity unit, which, in turn, is based on the contract's assumed interest rate (AIR) per unit. If an investor pays a $1 million premium that is allocated across a menu of mutual funds, the payout for the remainder of the annuitant's life depends on the present value of the annuity unit liquidation over the annuitant's life (a unit value of $1 means that the investor purchases 1 million annuity units) rather than the present value of a dollar-denominated lifetime income stream. In other words, an actuary swaps annuity units for dollars when calculating the payout benefit. In nominal terms, a dollar is always worth a dollar, but an annuity unit is worth whatever the market says it is worth—which means that the investor receives a lifetime income that is steady when denominated in annuity units but is variable when denominated in dollars. The insurer guarantees that a monthly benefit will be paid for life, but it does not guarantee the dollar amount of that monthly benefit.

A contract's AIR sets an assumed rate of return on each annuity unit. The AIR represents an earnings "bogey" that the insurance company sets to cover its costs and protect its profits. The contract holder does not receive a raise unless the underlying investment portfolio's return exceeds the AIR. A low AIR means that the annuity contract holder receives a relatively lower initial payout but will be more likely to see future income increases if the underlying investment portfolio generates positive returns. For example, if the investor selects a contract with a low AIR (e.g., 3.5%), portfolio returns greater than 3.5% will push the dollar value of retirement income higher. If, however, the contract has a high AIR (e.g., 5%), portfolio returns must be greater than 5% for the annuitant to receive a payout increase.

Selecting the appropriate AIR is a variation on the risk–return trade-off faced by retirees. On the plus side, a VA contract with a 5% AIR provides a higher initial benefit per annuity unit than a contract with a 3.5% AIR. In other words, an investor who owns a contract with a 5% AIR receives a greater initial income but is less likely to see substantial growth in the dollar value of lifetime income. Many VA contract holders opt for a contract with a 5% AIR under the theory that a bird in the hand is worth more than

[15]An estimated 75% of all VA contracts sold in 2005 included riders with supplemental financial guarantees. Before the recent recession, insurance carriers were in a race to offer more and more competitive products. Currently, they appear to have reversed direction and are now in a race to sell products with increased rider costs and/or decreased rider benefits.

two in the bush. For example, assume that an investor selects a contract with a 5% AIR. If the underlying investment portfolio performs poorly (return less than 5%), the value of the monthly annuity check decreases. If the investment performance matches the 5% AIR, the monthly check is unchanged. If the investment performance exceeds the 5% AIR, the monthly check increases. Now let us compare this contract with one at a 3.5% AIR. Future downside variability of the monthly income provided by liquidating the annuity units is likely to be greater in a 5% AIR contract than in a 3.5% AIR contract. In a 5% AIR contract, the income falls if the underlying portfolio fails to achieve a 5% return; in a 3.5% AIR contract, the income falls only if the underlying portfolio fails to achieve a 3.5% return. Thus, a 3.5% AIR contract is more "forgiving" of mediocre investment performance. For example, a 4% realized return produces a monthly raise for a 3.5% AIR contract holder and a monthly cut for a 5% AIR contract holder.

Not only can the annuitant fail to receive an increase in benefits for the first 3.5%–5% of positive market performance, but also the expenses, fees, and commissions in the VA are paid by liquidating annuity units. Assuming a 5% AIR with a 3% total annual fee, the income beneficiary forgoes any benefit increase for the first 8% of aggregate portfolio gain. Such distinctions, however, are easily blurred during a sales presentation. One reason why it was not misleading for VA carriers to tell regulatory authorities that annuity guarantees were "incidental" with respect to their earnings and profits was the low probability that the average investor would opt for annuitizing a VA contract for retirement income purposes. Clearly, if VA sales were to penetrate the "senior market," dollar-denominated guarantees would have to be offered to investors—hence, the appearance of lifetime income guarantee riders.

VA income riders became widespread in 2002 with the marketing of a guaranteed minimum withdrawal benefit (GMWB). Before then, most guarantee riders assured the contract holder that the beneficiary would receive a minimum amount of guaranteed death benefits within a designated period—possibly measured by actual lifespan—irrespective of the account's value.[16] Although the GMWB rider comes in many permutations, the basic structure is a guarantee that the contract owner can withdraw, over a specified period, a pre-set annual amount of money until the aggregate withdrawal amount equals the initial premium paid into the contract—perhaps reduced for fees, commissions, and expenses. The amount eligible to be withdrawn may increase at certain future dates to reflect a higher account value on those dates. Once the aggregate withdrawal amount reaches its upper bound, however, the contract terms provide for no further benefits under the rider. The guarantee does not ensure a lifetime income stream.

In 2005, insurance carriers began offering a new guarantee rider to VA policy owners—the guaranteed lifetime withdrawal benefit (GLWB). Since its introduction, this rider

[16]The death benefit is adjusted for aggregate withdrawals before death.

has become popular because it does not place an upper bound on the aggregate amount of income payable to the investor.[17] Basically, the GLWB rider guarantees that the contract owner can withdraw a pre-specified fraction of the initial premium—adjusted for expenses, commissions, and fees—for life. The allowable fraction of the initial adjusted premium is a function of age. Typically, a 65-year-old receives a lifetime withdrawal guarantee of 4% of the premium. Often, there are step-ups in benefits at designated future dates provided that the account value—net of previous withdrawals, fees, commissions, and expenses—attains a dollar value higher than the amount of the initial adjusted premium. By 2005, the insurance industry was able to offer investors a contract with the following advantages:

- Liquidity
- Lifetime income
- Control over investment choices and asset allocation
- Tax advantages by deferring reportable gains for funds remaining in the annuity contract
- Tax exclusion of a portion of income received as a periodic annuity payment
- Mitigation of the impact of downside market risk through lifetime income continuation
- Ability to participate in market gains if bull markets push account values higher

Given all of these purported advantages, VA sales skyrocketed. However, in the case of a VA contract supplemented with lifetime income guarantee riders, there are so many complicated moving parts that it may be difficult to see the forest for the trees.

Although a full decomposition of a VA contract is beyond the scope of this piece, investors should be aware of the following items:

- The GLWB guarantee is a contingent guarantee that is in the money only if two events occur concurrently: (1) The income beneficiary remains alive and (2) the VA contract value falls to zero. If the two events fail to occur, the guarantee provides no benefits.
- An investor is unlikely to receive both the downside risk protection and the ability to participate fully in a bull market. Consider the following example: A newly

[17]Unfortunately, the names of the various riders have not become standardized across the industry. For example, the term GMWB is sometimes used to describe a GLWB. Companies often have proprietary trademarked designations for these riders, which further adds to the confusion.

purchased VA contract has an account value of $1 million and provides a GLWB of 4%. The contract states that if its account value is higher than $1 million one year from now, the owner can opt to ratchet up the withdrawal right to 4% of the higher value. The force driving the account value higher—the bull market—is offset by the forces driving the account value lower: withdrawals, fees, and expenses. The bottom line is that investors benefit from the downside protection withdrawal guarantee only in the event of a simultaneous occurrence of two future contingencies, and they benefit from participating in a bull market only if the market's performance is extraordinarily positive.[18]

- Sometimes, a marketing pitch might suggest that a VA with step-up or ratcheting provisions can provide inflation protection because of the potential for participation in market advances. This claim is dubious given the significant and ongoing drag on account values from both costs and withdrawals. Moreover, there is only a weak correlation between inflation and market returns.

- The tax consequences of receiving periodic payments under a GLWB rider may differ from those of receiving payments under an annuity contract. Payments under the rider may be deemed fully taxable ordinary income to the extent of any gain in the contract. Under certain conditions, the rider may convert all capital gains into ordinary income and may eviscerate the ability to use capital losses to offset other tax liabilities.[19]

- The more risk averse the investor, the greater the appeal of an income guarantee, all else being equal. In a VA contract, however, the investor cannot purchase the rider on a standalone basis; rather, it must be bundled with an investment program, generating costs that may be higher than those incurred outside the annuity contract. Thus, the guarantee has both an explicit cost (the amount the insurance company charges for the rider) and an implicit cost (the extra cost of investing under the auspices of the insurance company). This implicit cost can be surprisingly high, often

[18]These observations are not criticisms of the insurance principles underlying the VA contract. Insurance policy buyers hope to receive no benefits whatsoever for the premium payments made to an automobile insurance company because they do not wish to be involved in an accident. However, if the company is charging an annual premium of $2,000 to insure a vehicle that is worth $1,500, most automobile owners would question the wisdom of continuing such an arrangement. Gaobo Pang and Mark J. Warshawsky have noted that modeling a VA with a GMWB is difficult because "the majority (approximately 70 percent) of the VA+GMWB providers . . . state in their prospectuses that, upon the automatic step-up or the investor-elected step-up of GIB [guaranteed income benefit], the contracts will increase, may increase, or reserve the right to increase the annual rider percentage charges, subject to the contract maximum rates. Changes in market conditions may also trigger such fee hikes" (p. 45). See Gaobo Pang and Mark J. Warshawsky, "Comparing Strategies for Retirement Wealth Management: Mutual Funds and Annuities," *Journal of Financial Planning*, vol. 22, no. 8 (August 2009): 36–47.

[19]In 2014, a working committee of the NAIC recommended that the GLWB rider be reclassified as a "hybrid annuity." If the recommendation is adopted, it is uncertain whether or how it would affect the taxation of benefits received under the rider.

amounting to more than 2% a year[20] compared with 0.1%–0.25% a year for (non-annuity) index fund investing. These cost differences add up over time, significantly affecting portfolio values.

- Are the extra costs worth it? This question should be answered on a case-by-case basis. However, some general observations can be made. Although a VA contract has costs that are absent from non-annuity investment programs, these extra costs provide two benefits: (1) a tax shield and (2) the right to annuitize according to the actuarial formulas described earlier. For an additional cost, the investor can secure a rider that provides a contingent guarantee of a dollar-denominated withdrawal right. Clearly, a rational investor would not purchase an annuity with a 2% nondeductible ongoing fee to obtain the benefit of a tax shield on an investment program generating a 1% pre-tax rate of return. Therefore, in an investment environment of low interest rates on fixed-income instruments, the cost of the tax shield is justified if the investment portfolio has an expected pre-tax return in the neighborhood of 5% or higher. This return may be achievable with high-yield ("junk") bonds, but the annuity guarantees appeal primarily to risk-averse investors, who are not attracted to this asset class. Thus, to justify the cost and to exploit the purported advantages of the annuity program, the investor in a low-interest-rate economy must look to stocks. But the higher the allocation to stocks, the more volatile the account value. At the end of the day, it may be cold comfort to a retired investor that the withdrawal right is in the money while the actual account value is zero. When the account value hits zero, the investor is stopped from any further participation in financial gains, has lost all liquidity, has permanently locked in a budget constraint, has no inflation protection, and can rely solely on the insurer's continued solvency for income.

- The GLWB rider limits a VA contract's liquidity. If an annuitant makes withdrawals in excess of those permitted under the terms of the rider, the amount of future income withdrawals is subject to modification. For example, if a VA contract holder requires a large withdrawal to pay for unexpected expenses, there is usually a pro-rata adjustment in the amount of guaranteed future income provided under the terms of the rider. The amount of excess withdrawals may also be subject to contract surrender charges. Suppose that an 85-year-old investor holding a VA contract with a 4.5% GLWB rider has scrupulously kept annual withdrawals to 4.5% of the original premium amount—as required by the terms of the rider. But because of poor investment performance, the contract, whose initial account value was $500,000, is now worth only $100,000. The investor needs to withdraw an additional $30,000 for unexpected medical expenses. Many GLWB riders make a pro-rata adjustment in the guarantee—in this case, a reduction of 30,000/100,000, or 30%, in the guaranteed future payments.

[20]Vanguard Group, "Annuities Offered through Vanguard," cited Morningstar, Inc., as of December 2014.

Perhaps the most questionable element of a VA contract is the implicit assumption regarding the nature of the guarantee itself. Assume that the account value has been fully depleted because of a long and highly virulent bear market. The only way for the investor to believe in the creditworthiness of the guarantee is to believe that the forces driving the horrible performance of financial assets have little impact on the solvency prospects of the insurance company. It strains credibility, however, to believe that the financial condition of insurance carriers moves independently of general economic trends. The individual components of a VA contract seem attractive when evaluated in isolation. But the informed investor considers how the components act in tandem, which is a difficult task because of the complexity of the product and the lack of clear disclosure by some product purveyors. Certainly, a typical VA contract's costs are a substantial long-term drag on investment performance compared with no-load mutual funds and exchange-traded funds. For investment horizons of 20 years or more, the account values in a VA contract can easily be less than two-thirds of those in a mutual fund portfolio with the same initial value and the same underlying asset allocation—which means that 30%–40% of wealth may be sacrificed to purchase contingent guarantees. Insurance protection is never free.

THE RUIN CONTINGENT DEFERRED ANNUITY

The GLWB rider requires an insurance company to act as both guarantor and investment intermediary. In contrast, the ruin contingent deferred annuity (RCDA) does not require the layers of fees associated with investment programs conducted under insurance company auspices. With an RCDA, the investor retains broader—but not unlimited—control over the portfolio of financial assets while buying only a contingent guarantee of lifetime income continuation. The RCDA strategy allows the investor to approximate a "buy-a-guarantee-and-invest-the-difference" type of portfolio management program.

Unlike the irrevocable sacrifice of capital required by SPIAs and SPDAs, the RCDA merely requires the payment of an annual fee. Should the portfolio owner fail to pay the fee, coverage terminates without surrender charges. Presumably, an investor encountering a bear market early in retirement can protect the portfolio by paying the annual fee for the income guarantee. If the sequence of market returns is favorable, the investment surplus makes the continuation of the guarantee less necessary; if the sequence of returns is unfavorable, the investor may elect to continue paying until the guarantee is in the

money or until the portfolio sufficiently recovers. The RCDA is akin to the GLWB rider, but the RCDA is available without having to purchase a high-cost VA contract.[21]

These types of contracts are relatively new; as of mid-2012, only about 30 states had approved the contract for sale. Several firms have withdrawn their RCDA products from the marketplace, asserting that the product specifications are being reworked and that they intend to reintroduce updated versions. Perhaps the largest current market share belongs to a commission-free RCDA sold through a Transamerica Life subsidiary and based on the claims-paying ability of Transamerica Advisors Life Insurance Company.[22] The product is marketed by Aria Retirement Solutions under the name RetireOne.[23] The RetireOne product requires that the investor's portfolio consist of a broad cross section of designated no-load mutual funds and exchange-traded funds. The portfolio is not managed by the insurance carrier and remains under the investor's control at the custodian of choice.[24] The decoupling of the guarantee from the underlying portfolio means that the contract does not provide a tax shield.

The amount of lifetime guaranteed income is partly a function of the annuitant's age at the time of the income guarantee election date. The cost of the lifetime income guarantee is partly a function of age, current interest rates, and portfolio asset allocation. Portfolio risk is strictly limited by capping the allowable weighting of risky assets at maximum percentages—which means that the cost of guaranteeing a lifetime income from a high-volatility portfolio may be substantially greater than the cost incurred with a lower-volatility portfolio.[25]

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[21]According to the American Academy of Actuaries, "A CDA is essentially a stand-alone guaranteed living withdrawal benefit" (p. 2). Note that in this context, CDA means the same thing as RCDA. See Nancy Bennett, "An Overview of Contingent Deferred Annuities," Life Insurance and Financial Planning Committee, National Conference of Insurance Legislators (25 February 2012).

[22]The insurer is part of the Aegon Americas group of companies. As of 1 June 2015, the A.M. Best Company rated Transamerica Life Insurance A+ with respect to financial strength and AA– with respect to its ability to meet its ongoing financial obligations. Aegon N.V. is an international life insurance, pension, and investment group based in The Hague, the Netherlands. The parent company or affiliates, however, may not back the guarantee according to disclosure information: "The guaranteed lifetime payments are backed by the claims-paying ability of Transamerica Advisors Life Insurance Company. They are not backed by any other entity." Transamerica Advisors Life Insurance Company carries similar A.M. Best ratings. See provisions of the online prospectus for Aria RetireOne investment products at www.sec.gov/Archives/edgar/data/845091/000119312513456163/d635967dfwp.htm.

[23]Aria is an acronym for access to registered investment advisers. The SALB (stand-alone living benefit) program also refers to this product.

[24]Fees for the lifetime income guarantee are billed directly to the investor and, unlike in a VA contract, are not paid by liquidating investment positions within the covered account.

[25]Investors should study the RetireOne prospectus carefully to understand the contract provisions and options. These provisions include the ability to exercise options via step-up or ratcheting formulas, payout adjustments in the event of large interest rate moves, maximum future fee adjustments, and discounts for large portfolios. Although perhaps not as complex as VA contracts, RCDAs give investors an abundance of fine print to digest.

The relationship between portfolio volatility and RCDA cost is an area of concern for regulators. Felix Schirripa, chief actuary at the New Jersey Department of Banking and Insurance, heads an NAIC committee tasked with conducting a broad review of VA and RCDA guarantees. The committee's concern cuts in two directions:

- What are prudent reserving requirements for such guarantees? This question addresses the issue of solvency risk for the insurance carrier.

- What is the value of the guarantee to the consumer if the insurance company caps portfolio volatility by limiting the proportional weighting of risky assets in the portfolio? This question addresses a variety of consumer protection issues.

Schirripa's actuarial risk models suggest that the annuitant may not receive meaningful or cost-effective longevity protection because of the relationship between volatility and cost of protection. Schirripa's work highlights the importance of considering all contract provisions in tandem rather than separately. The RCDA product seems to share the same liquidity difficulties as VA contracts—namely, that the guaranteed future cash flows can decrease significantly for investors who need to access their accounts for unexpected expenses. In addition to the cost versus volatility question, Schirripa's committee is considering other issues:

- Are RCDA contracts financial guarantees or annuity products?[26]

- Are the contracts covered by state guarantee funds, and if so, do they have nonforfeiture provisions?

The tax rules governing RCDA contracts are not yet fully determined. The IRS has issued a series of private-letter rulings suggesting that it will treat income received from RCDAs as "annuity income" subject to the applicable annuity taxation rules in the Revenue Code.[27] However, some commentators have opined that certain withdrawals under RCDA contracts will be taxed at lower capital gains rates.[28] Similarly, the jurisdictional bounds of the SEC remain uncertain.

The probability that the company making the guarantee will remain in business is also of more than passing interest to the investor. The American Academy of Actuaries indicates that from a consumer's perspective, RCDAs can be a beneficial product because they are

[26]The NAIC Working Committee recommends that GLWBs be classified as "hybrid income annuities" and that RCDAs be classified as "synthetic hybrid income annuities" (p. 2); see Contingent Deferred Annuity (A) Subgroup Conference Call Summary (16 February 2012).

[27]Private-letter rulings apply only to the specific taxpayers to whom they are issued.

[28]RetireOne marketing material states that "benefit payments to you are subject to ordinary income tax" if paid under the terms of the RCDA guarantee and that the annuity has "no cash value, surrender value or death benefit" (pp. 45, 1); see prospectus dated 15 May 2013 as amended and restated 15 May 2014.

"annuity products which transfer both investment risk and longevity risk to the insurers who issue them." NAIC's CDA Working Group (RCDAs are sometimes simply called CDAs) continues to work to establish regulatory recommendations with respect to company financial solvency requirements, regulatory authority, and consumer protections.[29] RCDAs are still a work in progress.

For some investors, the RCDA product appears to represent a significant advance over the GLWB/VA package. However, a variety of issues remain to be settled. The informed investor should be fully aware of the NAIC's work agenda. Fortunately, many uncertainties may reach satisfactory resolutions in the near future. At that point, the decision whether to acquire the product to protect some or all of the portfolio's cash flow–generating ability will become a more straightforward cost–benefit analysis.[30]

CONCLUSION

The pace of innovation in the US insurance industry remains strong. From the industry's perspective, the challenge is to offer products with sufficiently appealing long-term guarantees to attract consumer interest while developing profitable strategies to fund the guarantees in a low-interest-rate environment. Liabilities can easily exceed 30 years, whereas asset portfolios may have a maturity gap of 10 years or more. It is difficult to "duration match" such a lengthy liability structure. A sudden rise in rates may not cure the risk of a duration mismatch because the economic decrease in liability valuation may not exceed the decrease in the present value of the annuity reserve portfolios. In addition, the industry faces certain risks because of current ambiguities in accounting, reserving, and capital standards regulation. To state the obvious, a guarantee is only as good as the company standing behind it.

From the consumer's perspective, the challenge is to acquire—either directly or through the services of an actuarial consultant or financial adviser—the skill set required to

[29]On 26 February 2015, the NAIC stated that a CDA contract "establishes a life insurer's obligation to make periodic payments for the annuitant's lifetime at the time designated investments, which are not held or owned by the insurer, are depleted to a contractually defined amount due to contractually permitted withdrawals, market performance, fees or other charges" (www.naic.org/cipr_topics/topic_contingent_deferred_annuities.htm). On 24 March 2015, the CDA Working Group addressed the issue of whether CDA contracts are fixed or variable annuities in its draft "Guidance for the Financial Solvency and Market Conduct Regulation of Insurers Who Offer Contingent Deferred Annuities," stating that "because a CDA shares qualities of both a fixed and variable annuity, the Working Group concluded that a CDA should not be classified in either category but instead belongs in its own category" (www.naic.org/documents/committees_a_contingent_deferred_annuity_wg_exposure_cda_guidance_clean.pdf). A good recap of regulatory concerns about CDAs can be found in Leslie Scism, "New Annuity Guarantees Raise Questions," *Wall Street Journal* (3 February 2013): http://online.wsj.com/news/articles/SB10001424127887323468604578247692560852924.

[30]For example, the investor might compare the current cost of an SPDA in which the payout is contingent on only survival with the present value of the yearly cost of an RCDA promising to pay a comparable income in which the payout is contingent on both survival and complete portfolio depletion.

analyze the financial risks, rewards, and costs of implementing annuity-based solutions. The marketing war for consumers' business is taking place on a battlefield with many competing adversaries. One set of advisers sees annuities as a first-choice option that provides safe and sustainable guaranteed income—a "buy-an-annuity-and-invest-the-difference" strategy. Another set of advisers sees annuities as instruments that can provide tax advantages to wealthy investors seeking to accumulate funds through contributions in excess of qualified plan/deferred compensation plan limits—an "optimize-fiduciary-wealth-structures" strategy. Some quant-oriented advisers compare the annuity payout with the future expected equity risk premium (or some other suitable metric) to determine the most propitious time to exercise the option to annuitize wealth—an "options valuation" strategy. A large group of advisers considers an annuity a financial instrument that the investor might wish to acquire if the portfolio suffers a loss of sufficient magnitude to jeopardize its ability to provide critical future cash flows—the annuity as "safety net." Finally, some financial planners espouse annuities as a hedge against either the risks of future cognitive impairment or, given the recent bundling of annuities and long-term-care contracts into a single package, the peril of late-in-life unreimbursed health care expenses—the annuity as a vehicle for long-term care.

As insurance carriers develop new products to attract customers, the task of evaluating the merits of their offerings will require more homework on the part of financial advisers. A fiduciary standard encompasses both a standard of conduct and a standard of competence.

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