RETIREMENT INCOME INSTITUTE
Alliance for Lifetime Income

**Who Should Read This Insight:**
Retirement savers and their financial advisors, annuity manufacturers, plan sponsors, and policymakers and regulators

**Institute Research Agenda Topic:**
Optimizing annuities in a retirement portfolio

# *Insight:* THE ADVANCED LIFE DEFERRED ANNUITY—COST-EFFECTIVE INSURANCE AGAINST THE RISK OF OUTLIVING ONE'S WEALTH

Definitions of **bold key terms** are at the end of this article.

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**Author and Title of the Article(s) Addressed in this Insight**

*Gong, Guan, and Anthony Webb. 2009. "Evaluating the Advanced Life Deferred Annuity – An Annuity People Might Actually Buy." Working paper. Center for Retirement Research at Boston College, Boston, MA.*

*Milevsky, Moshe Arye. 2005. "Real Longevity Insurance with a Deductible: Introduction to Advanced-Life Delayed Annuities (ALDA)." North American Actuarial Journal 9 (4).*

*Scott, Jason S. 2008. "The Longevity Annuity: An Annuity for Everyone?" Financial Analysts Journal 71 (1).*

*Horneff, Vanya, Raimond Maurer, and Olivia S. Mitchell. 2016. "Putting the Pension Back in 401(k) Plans: Optimal Versus Default Longevity Income Annuities." Working Paper 22717, National Bureau of Economic Research, Cambridge, MA.*

## IDEAS IN THE INSIGHT YOU CAN PUT INTO ACTION

### Retirement Savers and Their Financial Advisors

Retirement savers should consider incorporating **advanced life deferred annuities** (ALDAs) in their retirement plans. Insured against the risk of outliving their retirement savings, retirees with ALDAs can spend their retirement savings more freely. Financial advisors should consider incorporating ALDAs into their clients' financial plans.

### Annuity Manufacturers

The benefits of ALDAs are even greater when purchased before retirement. Manufacturers should consider designing products that working-age households can purchase by affordable monthly installments through their retirement plans.

Current ALDAs provide either a level income or an income that increases by a fixed percentage each year. To protect purchasers against the risk of benefits being eroded by unexpectedly high inflation, **annuity** manufacturers should consider offering inflation-indexed ALDAs. Inflation protection is particularly important for ALDAs purchased at younger ages as longer periods elapse between contribution and payout.

### Plan Sponsors

Sponsors of 401(k) and other **defined-contribution retirement plans** should consider offering ALDAs as an investment option or even a default. A default would require safeguards protecting those who do not wish to purchase, but fail to opt out, perhaps through inattention or financial illiteracy. It may not be cost-effective to default very small balances; one study proposes only implementing a default when the account balance exceeds some specified amount.

### Policymakers and Regulators

The U.S. government should consider further relaxing regulatory obstacles to the purchase of ALDAs with 401(k) and IRA funds. First, the $130,000 exclusion of ALDA purchases from assets subject to 401(k)/IRA required minimum distributions is too restrictive, as is the similar limit in Canada. For a 65-year-old purchasing an ALDA commencing at age 85, $130,000 equates to a monthly benefit of at most $3,900, leaving part of the projected spending of higher earners uninsured.

Second, ALDAs with benefits do not qualify for the $130,000 exclusion. ALDAs are long duration contracts that expose manufacturers to substantial investment and **longevity risk** (i.e., the risk associated with people living longer than expected, on average). Manufacturers want to be compensated for these risks in the form of higher premiums or find a way to share the risks. Manufacturers could share the risks with ALDA purchasers in several ways. For example, if the mortality rate of their customers was lower than

expected (i.e., fewer early deaths), then benefits might be decreased, with a corresponding increase in benefits if the mortality rate was higher than expected. Similarly, if the investment return manufacturers earn on premiums was worse than expected, then benefits might be decreased. Permitting manufacturers to share investment and longevity risk with purchasers might reduce premiums and contribute to an expansion of the market.

## PRINCIPAL INSIGHTS

### The Role of ALDAs in Financing Post-retirement Spending

All four studies investigate advanced life deferred annuities (ALDAs), sometimes referred to as longevity insurance or **deferred-income annuities.** In contrast to **immediate annuities,** where the lifetime income starts immediately on purchase, ALDA income payments commence at some advanced age. A typical contract is purchased at age 65 with monthly income starting at age 85 (for those who survive until then). Although the purpose of an ALDA is to finance spending in old age, some ALDAs provide a **death benefit,** which is a payment to a survivor of the annuity owner after the owner's death. A death benefit increases premiums.

ALDAs simplify the task of financing post-retirement spending. Households that do not purchase an ALDA face the complex task of drawing down retirement savings over an uncertain lifetime. They must trade off the risk of outliving their retirement savings against the cost of unnecessarily restricting spending. ALDA purchasers face the simpler task of drawing down retirement savings over a period ending on the date ALDA payments commence. Purchasing an immediate annuity simplifies draw-down even further—purchasers merely have to decide how to spend each month's annuity paycheck. But ALDAs cost a small fraction of immediate annuities because annuity manufacturers earn interest on the premiums during the deferral period (i.e., the waiting period before the income begins) and not all purchasers live to collect benefits. At current prices, a single male age 65 will receive $500 a month from $100,000 invested in an immediate annuity, compared with $2,880 a month at age 85 from an ALDA. The low cost of ALDAs makes them attractive to households that are, perhaps irrationally, averse to spending large shares of their retirement savings on an immediate annuity.

### The Four Studies

The study by Scott proposes a simple metric for measuring the financial benefit of longevity insurance, the Spending Improvement Coefficient. This is the increase in spending an individual would enjoy if, instead of setting aside money to pay for late life spending, they purchased a hypothetical longevity insurance contract under which the insurer pays the individual a lump sum conditional on the individual's survival to a specified age, zero otherwise. The key insight is that the largest Spending Improvement Coefficient is for contracts paying out at very advanced ages.

Consider an individual aged 65 who faces the task of financing spending during a single year 20 years in the future. They could self-insure by investing in a financial asset. At an assumed 2.5 percent interest rate, $1 would grow to $1.64 over 20 years. Assuming population mortality, the insurance company could offer a lump sum benefit of $3.18 because it knows some purchasers will not live to collect the benefit. The Spending Improvement Coefficient is 1.94: the $3.18 they receive from the ALDA divided by the $1.64 they would receive if they invested the money themselves.

This Spending Improvement Coefficient increases with age because individuals are less likely to live to ever-more-advanced ages. In contrast, a contract purchased at age 65 making a single payment at age 66 has a Spending Improvement Coefficient of little more than one because the manufacturer knows a 65-year-old is virtually certain of living to age 66 and prices the contract accordingly.

In real life, annuity contracts make a series of payments over the individual's life. Scott invites the reader to think of a traditional annuity contract as a bundle of single payment annuities. Scott argues that individuals uncomfortable annuitizing all their retirement savings should prioritize buying an ALDA, a bundle of single payment annuities paying income at older ages when the Spending Improvement Coefficient is highest. Both annuity and ALDA prices incorporate "expense loads"—essentially, insurance

company costs for providing, administering, and maintaining annuities. Scott finds that his theoretical results hold when he uses market annuity and ALDA premiums.

Milevsky envisages a somewhat different product—an ALDA paying an inflation-adjusted income commencing at (say) age 85, purchased by annual premiums through retirement plans. Assuming prices based on the lower-than-average mortality of people who currently buy annuities, and a 3.25 percent real interest rate (the article was published in 2005 when interest rates were higher than today), Milevsky estimated that a yearly premium of just three cents, payable from age 35 to age 84, would yield an income of $1 a year starting at age 85. To keep costs low, the policy would not provide a death benefit.

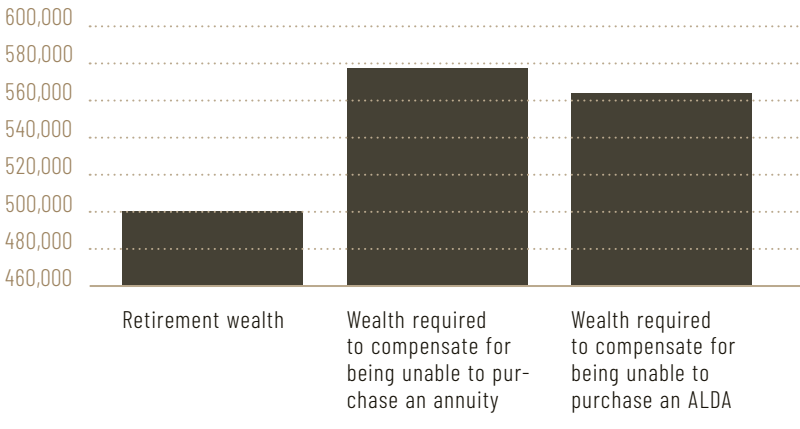
Based on discussions with a manufacturer, Milevsky identifies four real-world barriers to the introduction of his product. First, insurance company systems are not set up to collect premiums over such long periods or handle cost-of-living adjustments to the premiums. Second, due to the long period before benefits commence, insurance companies face administrative challenges in tracking purchasers and financial challenges in finding matching long-term investments. Third, the inflation protection provides additional challenges because long-dated Treasury Inflation Protected Securities do not exist, leaving the inflation risk unhedged. Fourth, the manufacturer perceived the absence of a death benefit as posing a problem from a public relations and possibly a marketing perspective, even though the absence of a death benefit keeps costs down.

A limitation of the above papers is that they do not provide guidance as to the optimal shares of retirement savings to be allocated to unannuitized wealth, immediate annuities, and ALDAs. They also do not provide guidance about the age at which ALDA income should commence, or the sensitivity of guidance to household preferences and annuity and ALDA expense loads. The studies by Gong and Webb and by Horneff, Maurer, and Mitchell address these questions. The calculations are computationally challenging, and of necessity, both papers make simplifying assumptions.

The study by Gong and Webb uses annuity equivalent wealth, a yardstick that is standard in the academic literature, to evaluate alternative strategies. Annuity equivalent wealth is the percentage by which one would have to increase a household's retirement savings at retirement so that it was as well off without an annuity as with one. An analogous calculation can be made of ALDA equivalent wealth. The answers depend on many factors, such as the household's attitude toward risk, the extent to which they have access to other sources of **annuitized** or annuity-like income, such as Social Security, and whether they are married or single.

Consider an age-60 couple with $500,000 of financial assets who allocate an optimal 14 percent ($70,000) of their retirement savings to an ALDA with benefits commencing at age 85. Assuming market ALDA prices and plausible attitudes toward risk, the couple would require a 13.2 percent increase in retirement savings ($66,000 to $566,000) to be as well off undertaking a drawdown of unannuitized retirement savings as with an ALDA. They would be even better off with an immediate annuity. They would require a 15.6 percent increase in retirement savings ($78,000 to $578,000) to be as well off undertaking a drawdown of unannuitized retirement savings as with an annuity. Although the household is better off with the annuity than with the ALDA, the difference is small ($78,000 vs. $66,000). The ALDA may be more appealing if the household is reluctant to commit all $500,000 to the purchase of an annuity.

**WEALTH REQUIRED TO COMPENSATE FOR BEING UNABLE TO PURCHASE AN ANNUITY OR ALDA**



Households more willing to bear longevity risk will be better off with an ALDA than with an immediate annuity and will prefer ALDAs with longer deferral periods before income commences. At lower expense loads, households will prefer more complete coverage—an ALDA with a shorter deferral period or even an immediate annuity.

The paper by Horneff, Maurer, and Mitchell uses the same annuity equivalent wealth yardstick as the paper by Gong and Webb and reaches similar conclusions. The Horneff, Maurer, and Mitchell model is more realistic than the Gong and Webb model in that it incorporates federal and state income taxes, and Social Security contributions and benefits. In contrast to Gong and Webb, who assume households save only in a risk-free bond, Horneff et al.'s model assumes that 401(k) assets are invested in a life-cycle fund including both stocks and bonds. Horneff, Maurer, and Mitchell show that ALDAs benefit both men and women as well as high-earning college graduates and, to a lesser extent, low earners with less than a high school education.

The Horneff, Maurer, and Mitchell study has three limitations, likely necessitated by the complexity of the calculations: (1) it does not identify the optimal benefit deferral period, nor whether the optimal deferral period is affected by ALDA expense loads, (2) it compares ALDA purchase with an optimal accumulation and drawdown of unannuitized retirement savings, and does not consider whether individuals might be even better off purchasing an immediate annuity with all or part of their retirement savings, and (3) it reports results for single individuals, not for married couples who might place a lower value on ALDAs because they can pool longevity risk within the household.

Directions for future research include more-realistic models that (1) incorporate housing wealth and uncertain health care costs, (2) incorporate the ability to purchase additional Social Security income by delaying claiming, and (3) compare the benefits of existing ALDAs and immediate annuities with innovative products where households share investment and longevity risk with the manufacturer.

To learn more, visit the Retirement Income Institute at
*www.allianceforlifetimeincome.org/retirement-income-institute*

**KEY TERMS ARE SOURCED FROM THE ALLIANCE FOR LIFETIME INCOME'S ANNUITIES LANGUAGE GLOSSARY AND INVESTOPEDIA**

**Advanced life deferred annuities:** *A longevity annuity works like a normal life annuity but tends to start much later than the typical retirement age. It acts like longevity insurance in that payments may not start until a retiree's other assets are spent down.*

**Annuitized:** *When you turn your current account balance into income payments.*

**Annuity:** *A financial product that can offer protected lifetime income and even potentially grow your money.*

**Death benefit:** *A benefit that pays your beneficiary the remaining account balance or income should you pass away.*

**Deferred-income annuity:** *A type of annuity that delays payments until you choose to receive them, while providing an opportunity for growth or income during the deferral period.*

**Defined-contribution retirement plan:** *Plans that allow employees to invest pre-tax dollars in the capital markets where they can grow tax-deferred until retirement.*

**Immediate annuity:** *An annuity that begins paying out guaranteed income within one year after the date of purchase, either for life or for a selected time period.*

**Longevity risk:** *The chance that you may live longer than your income will last.*

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