EVALUATING THE ADVANCED LIFE DEFERRED ANNUITY — AN ANNUITY PEOPLE MIGHT ACTUALLY BUY

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This paper evaluates a proposed new annuity product, the Advanced Life Deferred Annuity (ALDA). This is an inflation protected annuity purchased at retirement or even earlier, but which provides an income that only commences in advanced old age. The ALDA can be thought of as a longevity insurance policy with a large deductible.

Annuities provide insurance against being unlucky enough to live exceptionally long. Although this insurance should, in theory, be attractive to risk-averse households facing an uncertain lifespan, rates of voluntary annuitization remain extremely low. One prominent explanation is that annuitization involves a loss of liquidity. The ALDA overcomes this objection because the cost, at age 60 or 65, of purchasing an ALDA sufficient to provide an optimal level of consumption from (say) age 85 onwards, is only a small fraction of the household's wealth.

ALDAs don't yet exist, at least in the form we propose. The starting point of our research is therefore to calculate projected ALDA prices. We assume that ALDAs are priced using the same annuitant mortality tables that insurance companies use to price immediate inflation-protected annuities, and that they have the same expense loads. These expense loads aren't directly observable, so we follow the literature by recovering them by calculating the money's worth of immediate inflation-protected annuities to the average annuitant, discounting the income stream at the Treasury Inflation Protected Securities rate of interest. We show that the large deductible results in extremely low premiums. We estimate that ALDAs with income payments commencing at ages 70, 75, 80, 85, and 90 would cost $14.01, $9.87, $6.42, $3.70, and $1.76 per dollar of income, if purchased at age 60, and $15.91, $11.17, $7.24, $4.14, and $1.95 at age 65.

We then consider how much longevity insurance an ALDA can provide. The literature measures the longevity insurance provided by annuities in terms of "annuity equivalent wealth," the factor by which unannuitized wealth must be multiplied so that the household is indifferent between purchasing an actuarially fair annuity and undertaking an optimal decumulation of unannuitized wealth.[1] This optimal decumulation involves a careful balancing of the risk of outliving one's wealth against the cost of foregoing valu-

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[1] We define an actuarially fair annuity as one whose expected return, discounted by an interest rate and annual survival probabilities derived from population mortality tables, equals the premium paid.

able consumption opportunities. An analogous calculation can be made of ALDA equivalent wealth in which an optimal decumulation of unannuitized wealth is compared with the purchase of an ALDA with part of the household's wealth and the optimal decumulation of the remainder of the household's wealth over a period ending on the date that the ALDA payments commence. The calculation of ALDA equivalent wealth is somewhat more complicated in that one must jointly determine the optimal allocation of wealth to the ALDA and the optimal decumulation of unannuitized wealth.

The full longevity insurance provided by immediate annuities is more valuable than the partial insurance provided by ALDAs. But ALDAs provide almost as much longevity insurance as annuities if there is only a very low probability of dying before the ALDA payments commence, and substantial amounts even at quite advanced commencement ages. To illustrate, at age 60, annuity equivalent wealth equals 1.291 at a coefficient of risk aversion of five, meaning that the household is indifferent between $100 of annuitized wealth, and $129.10 of unannuitized wealth. ALDA equivalent wealth equals 1.181 at a commencement age of 85, and the ALDA provides 62.4 percent of the longevity insurance provided by the annuity. Importantly, the ALDA provides very nearly as much insurance if the household simply consumes an equal amount every period from retirement until the age the ALDA payments commence as it would obtain were it to consume the optimal amount.

But the above calculations are a poor guide to the relative attractiveness of annuities, ALDAs, and the decumulation of unannuitized wealth in practice, because they fail to take account of actuarial unfairness. Based on our projected prices, ALDAs are going to have a much lower money's worth (the income stream, discounted by an interest rate and annual survival probabilities, and divided by the premium paid) than regular annuities. But this is a poor guide to their relative attractiveness because households will spend only a small proportion of their wealth on an ALDA, so the cost of actuarial unfairness may be quite small in dollar terms.

We recalculate annuity and ALDA equivalent wealth incorporating actual and projected levels of actuarial unfairness. We confirm the findings of previous literature that full annuitization immediately on retirement is of marginal value to households with population average mortality – at age 60, annuity equivalent wealth varies from 0.967 at a coefficient of risk aversion of two to 1.026 at a coefficient of five. Postponing annuitization until the optimal age performs better – annuity equivalent wealth varies from 1.050 to 1.071. But buying an ALDA with an income stream commencing at age 85 does even better, with ALDA equivalent wealth varying from 1.059 to 1.103. A household would be as much as 10.3 percent better off buying the ALDA relative to the alternative of undertaking an optimal decumulation of unannuitized wealth.

But few households that choose not to annuitize undertake optimal decumulations. They likely follow rules of thumb, such as decumulating over one's life expectancy, or drawing a fixed percentage of initial wealth every period. These strategies are likely to be far from optimal. In contrast, we show that a household that purchases an ALDA can do almost as well following a rule of thumb of equal consumption every period up to the age at which the ALDA payments commence as it can by undertaking an optimal decumulation of unannuitized wealth. ALDAs have the potential to greatly simplify the task of retirement wealth decumulation.

Finally, we consider the potential for ALDAs to be used as a 401(k) default. Defaults have been shown to be a highly effective means of increasing 401(k) participation rates, and they may possibly be equally effective in increasing the take-up of ALDAs. But the decision to purchase an ALDA is very different from the decision to participate in a 401(k). Few households are likely to suffer serious harm by saving too much, and the savings decision is reversible. In contrast, the decision to purchase an ALDA is irrevocable, and may not be appropriate for high mortality households.

We calculate subjective life tables for individuals in the Health and Retirement Study, a panel dataset of over 12,000 individuals born between 1931 and 1941, based on each individual's assessment of his or her probability of surviving to age 75. We then sort the households by subjective mortality beliefs and focus on the household at the 5th percentile of the distribution of those beliefs. This household would be made only slightly worse off by annuitization – its annuity equivalent wealth is 0.99 at a coefficient of risk aversion of five – consistent with previous research that shows that even high mortality households place a high value on insurance against even a low probability of surviving to advanced old age. The household's ALDA equivalent wealth is 1.059, compared with 1.078 for the average. We conclude that even high mortality households would benefit from the purchase of an ALDA. Importantly, the optimal commencement age and investment allocation to the ALDA differs little from that for the average household, suggesting that defaults designed with the average household in mind can be safely recommended to high mortality households.