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Who Should Read This Insight:
Wealth managers, retirement investors, annuity manufacturers, policymakers

Institute Research Agenda Topics:
New takes on the annuity puzzle, optimizing annuities in a retirement portfolio

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Authors, Titles and Publication Dates of the Articles Addressed in the Insight

Thomas Davidoff, Jeffrey R. Brown, and Peter A. Diamond. 2005. "Annuities and Individual Welfare." The American Economic Review. 95:5.

David Blanchett. 2016. "Defaulting Participants in Defined Contribution Plans into Annuities: Are the Potential Benefits Worth the Costs?" Journal of Retirement. 4:1 (Summer).

Thomas L. Totten and Lawrence B. Siegel. 2019. "Combining Conventional Investing with a Lifetime Income Guarantee: A Blueprint for Retirement Security." Journal of Retirement. 6:4 (Spring).

Insight: NEW TAKES ON THE ANNUITY PUZZLE: THE IMPORTANCE OF FRAMING LONGEVITY WITH CLIENTS

IDEAS IN THE INSIGHT YOU CAN PUT INTO ACTION

Retirement investors can combine traditional investments in stocks and bonds with a position in annuities to achieve the best of both worlds: longevity insurance from annuities and upside, emergency withdrawals, bequests, and personalized payout paths from traditional investments. These combination portfolios can be implemented in numerous ways, such as offering annuity options in defined-contribution (DC) plan selections, mixing DC plans with defined-benefit plans for very late in life (e.g., age 85 and older), or expanding the social security program.

PRINCIPAL INSIGHTS

Extreme views on the value of annuities and other lifetime income guarantees

Annuities offer a clear value proposition to retirement investors because money is worth much more to them when they are alive. This allows annuity providers to offer higher rates of return while the retiree lives, and lower once they die, than traditional fixed-income investments such as bonds. This value proposition is so strong that early research by economists (e.g., Yaari 1965) suggested investors should allocate all their wealth to annuities upon retirement.

There are, however, many downsides to annuities for retirement investors that this overly simple value proposition ignores:

A) They may want to bequeath some assets to heirs.

B) It may be impossible or expensive to sell or borrow against future annuity payments to cover emergency expenses.

C) Available annuities may not exactly match their needs.

D) They may expect to die sooner than average, making annuities, which are priced based on typical life expectancy, worse deals. This is particularly relevant for low-income and male investors because those groups have lower life expectancies than annuity pricing usually considers.

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E) The annuities market may not be competitive enough to offer better rates of after-cost returns than bond funds in practice.

F) They may want to participate in equity markets' upside.

Do these downsides mean retirement investors are better off with defined-contribution (DC) plans invested in a mix of public equities and bonds, which is by far the most common form of present-day retirement savings, instead of defined-benefit (DB) or annuity plans? In other words, have we resolved the so-called annuity puzzle? The answer is complex but important for retirement security.

A Middle Path

The three articles addressed here advocate for an alternative to the all-or-nothing viewpoint on annuities: holding traditional investments in stocks and bonds alongside annuities or a partial DB plan. These articles use a variety of methods and suggest slightly different approaches. Together, though, they make a compelling case that combining traditional investments with annuity-like holdings allows a retiree to tackle longevity risk while addressing most – if not all – of the potential downsides discussed above.

In short, mixing annuities with traditional investments offers the best of both worlds.

Longevity Risk is a Big Deal

Across all research analyzing annuities, including these three studies, a consistent theme is that longevity risk should be important to investors. Regardless of the assumptions made about investor preferences, researchers agree that investors should allocate substantial wealth to any investment that pays more when they are alive. Early research (e.g., Yaari 1965) took this to an extreme, showing that an investor with only zero or one future year to live should invest all their wealth in a fairly priced annuity that pays off nothing if they die and everything if they live.

The paper by Davidoff, Brown, and Diamond, generalizes the Yaari analysis to make it more realistic along many dimensions, as detailed below. The longevity risk channel, however, remains dominant, attracting 75 percent or more of optimizing retirement investors' wealth.

The paper by Blanchett, illustrates this value using an example. In 2016, a provider in Illinois offered an annuity to 55-year-old males that paid 22 percent of the initial investment each year starting at age 75. Such a large fixed payment would be impossible with a standard bond portfolio. This paper also provides formal analyses of optimal annuitization to show that substantial annuitization (above 20 percent of overall wealth) is optimal unless social security payments represent less than 50 percent of the retiree's needs.

The best illustration of longevity risk is provided in the paper by Totten and Siegal. This paper poses the following thought experiment: what withdrawal rate would a person need for their nest egg to last from age 65 to age 110? It's clear that 110 is much longer than the average person lives through retirement. But remember that without any lifetime income, a person should plan for the "worst" or risk living longer than the money lasts - and dying in poverty.

Some quick math shows that with interest rates in 2022 barely exceeding inflation, a person can only withdraw 3 percent of their initial portfolio value each year (increased with inflation) and still make it 45 years. This means saving $1 million just to have $40,000 pre-tax income in retirement, a goal beyond the means of most savers.

Using the prices in the Blanchett table, we can see annuities make this much easier: it only takes $615,000 at retirement to guarantee $40,000 pre-tax income from age 65 through the end of life. In this example, annuities would let someone save almost 40 percent less for the same quality of life in retirement.

Addressing Annuities' Downsides Using Traditional Investments

The main focus of Davidoff, Brown, and Diamond is showing formally that a variety of natural drawbacks to annuities can be addressed by mixing some amount of traditional stock and bond investments with annuities. Below is a summary of their mathematical arguments in lay terms.

First, a person may worry that annuities have larger markups or costs associated with them than mutual funds or other vehicles for investing in stock or bond markets. Davidoff, Brown, and Diamond point out that these costs would have to be enormous – which they mostly are not in practice – to overcome the longevity risk benefits of annuities.

Second, another concern is that annuities do not offer the ability to leave any retirement savings to children or other heirs. Davidoff, Brown, and Diamond show that someone can simply separate their savings into an account with traditional assets earmarked for heirs and annuities for the retiree.

Third, a natural concern is that a person may have unpredictable expenses that exceed annuity payouts in some years. This certainly argues against allocating 100 percent of retirement wealth in annuities, but again is solved by a "rainy day" portfolio invested in liquid stocks and bonds.

Finally, some may want consumption to increase (or decrease) throughout retirement at a different rate than any available annuities offer. This can be a common circumstance, and again rules out a 100 percent allocation to annuities. The retiree can, however, use the annuity most closely matching their consumption plan and supplement it with a liquid stock and bond portfolio that covers the residual.

Adding Annuities to DC Plans by Default

Blanchett considers the possibility of making annuities one of the default allocations in DC plans. Extensive research shows default allocations matter because many employees never change their investments. If annuities were, in fact, universally beneficial, making them a default allocation would also be beneficial.

For the reasons outlined above, however, annuities have downsides and may not be universally beneficial unless mixed with traditional investments. Blanchett focuses on three such downsides and uses a quantitative analysis to show "the costs of default annuitization … are relatively small, on average, versus the potential benefits." For example, they estimate that defaulting employees into a plan with a 50 percent allocation to annuities would be equivalent to increasing their wealth by 5 percent.

In addition to echoing variations of some of the concerns discussed in Davidoff, Brown, and Diamond, Blanchett raises the possibility that some savers may think they'll die earlier than the actuaries at the annuities provider expect, making annuities an unusually bad deal for them. This suggests a smaller annuity position for the average retiree, but some longevity risk remains. Again, the best solution is a mix of annuities to cover minimal expenses in case life is longer than expected and traditional investments to cover the early "expected" years.

Combining DC and DB Plans

Totten and Siegel offer a creative solution to the difficulty of widely implementing a portfolio containing both annuities and traditional investments: employers could offer DB plans covering only the later years of life (age 85 and older, for example) alongside DC plans. The late-life DB plan substitutes for annuities in solving the longevity risk issue and would cost employers only around 10 percent of a traditional DB plan – the 20 years between ages 65 and 85 make a big difference in mortality and the time value of money.

Mixing late-life DB plans (or annuities) with traditional investments only paying for early retirement has some subtle additional benefits, which Totten and Siegel highlight. First, it allows savers to participate in the upside associated with stocks. Second, a large late-life annuity allows retirees to spend much more aggressively out of their traditional asset DC plan than they would be able to without the annuity backstop.

A natural alternative would be a hybrid portfolio combining a small DB plan (or annuity) that starts paying at age 65 with a DC plan containing traditional assets. In fact, this is what the two other papers discuss. This is not, however, equivalent to the proposal by Totten and Siegel because the small lifetime payments do not hedge lifetime risk or the large but differed lifetime payments offered by late-life annuities.

CONCLUSION

Without DB retirement plans, most retirees face extreme longevity risk: they either have to risk living in poverty if they live past age 100 or live well below their means and, in most cases, die with large unspent wealth. A possible solution is to combine annuities that cover expenses past age 80 or 85 regardless of longevity with traditional assets to cover emergencies, offer upside, leave money to heirs, and personalize payout schedules.

REFERENCES

Yaari, M.E., 1965. Uncertain lifetime, life insurance, and the theory of the consumer. *The Review of Economic Studies,* 32(2), pp.137-150.

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