Tontine Savings Accounts

By Jonathan B. Forman and Richard K. Fullmer *Tue, Jun 30, 2020*

'While mimicking the high payouts of an actuarially fair variable life annuity, TSAs would cost significantly less than commercial life annuities,' write Forman and Fullmer.

A tontine is a financial vehicle that allows people to pool their assets and their mortality risk and thereby enhance their savings. We envision *tontine savings accounts* (TSAs) as taxable or tax-deferred retirement accounts, with investors free to select their investments and payout method. Payouts could be 10% to 15% higher than those of commercial life annuities.

Unlike a regular savings account (but like a life annuity), an investor in a TSA can't directly access her contributions or earnings. Instead, the investor would receive payouts only according to the payout method she elected.

A typical investor in a TSA might elect to receive relatively level monthly payments starting at her planned retirement age (if she is alive then) until her death. Alternatively, she might elect inflation-adjusted payouts that would start out lower than level payments but end up much higher. TSA payouts would be higher than payouts from regular savings accounts—precisely because surviving pool participants inherit the assets of those who die. These enhancements are known as "mortality gains" or "mortality credits."

Payouts from a TSA are based on:

- The investment returns on the investment portfolio that the investor elects
- The mortality experience of her tontine pool
- The payout method elected

While mimicking the high payouts of an actuarially fair variable life annuity, TSAs would cost significantly less than commercial life annuities. Tontine sponsors don't insure investors against market risk or longevity risk, so they don't need to set aside reserves to back up any guarantees. For a relatively trivial fee, they would merely invest and custody passively-managed funds, keep track of when investors die, reallocate forfeited assets to surviving investor accounts, and deliver payouts.

Sally, a 35-year-old investor

Consider Sally, a hypothetical 35-year-old investor who contributes $1,000 to a TSA at ABC Co., which could be an insurance or investment company. Sally and ABC agree that: 1) her contribution will be invested in a Standard & Poor's 500 (S&P 500) stock index fund, 2) Sally will get an appropriate lump-sum payout at, say, age 70 if she is alive then, but 3) if she dies before age 70, her contribution will be forfeited (for the benefit of the other investors in ABC's TSA portfolio).

Richard Fullmer

ABC does not guarantee the amount Sally would receive at age 70. When Sally first invests, neither she nor ABC knows how large her lump-sum payout will be in 35 years. But ABC offers Sally a "fair deal" [see explanation below] based on its transparent estimates of her probability of surviving to age 70 and the probable size of the lump-sum payout she would get.

For instance, ABC might tell Sally that a 35-year-old investor like her has an 80% chance of surviving to age 70 (from an appropriate life expectancy table) and that her investment in the S&P 500 index fund will earn an average annual rate of return of around 7% (from a capital markets forecast).

Given these two assumptions, ABC can tell Sally that if she survives until age 70, she should expect to collect a lump-sum payout of about $13,350 then. Here's the math:

First, if the S&P 500 index fund grows at exactly 7% every year for the next 35 years, then Sally's $1,000 investment will grow (ignoring expenses) to around $10,700 in 35 years ($10,676.58 = $1,000 × 1.07^{35}). Second, if exactly 20% of the 35-year-old investors in the TSA pool die before reaching age 70, then (if she survives until then) her payout will be around $13,350 ($13,345.73 = $10,676.58/0.80). If she doesn't survive, she will have

already forfeited her investment.

In other words, if Sally invests $1,000 in an S&P 500 index fund, she (or her heirs or estate) should get around $10,700 in 35 years. But if she instead invests $1,000 in a TSA, she should get around $13,350 if she survives until then. She would have an extra $2,670 to live on in retirement ($2,669.15 = $13,345.73 – $10,676.58). Depending on her bequest motives and other preferences, she could split her investment between a TSA and a regular account, for which she would designate beneficiaries.

‘Fair’ tontines

In a fair tontine, each investor receives a “fair” bet in the probabilistic sense, meaning that the expected value of mortality gains (while living) will equal the expected value of the account forfeiture (at death). Satisfying this “fairness constraint” requires that the forfeited assets of dying investors be transferred to the surviving investors in an actuarially fair (unbiased) way, based on each investor’s relative stake in the tontine pool and probability of dying.

Jonathan Forman

All in all, a fair tontine can be designed to offer fair bets to all investors even if they are of different ages and genders, invest different amounts at different times, use different investment portfolios, and elect different types of payouts.

Like traditional savings accounts and brokerage offerings, TSAs would be perpetually open-ended. New investors could open new accounts at any time, and current investors could make additional investments at any time. The individuals who make up any given financial institution’s tontine pool would change over time, and, eventually, newer generations of

investors would completely replace older generations.

All fees for TSAs would be plainly and transparently disclosed. The use of index funds as investments would make the all-in costs to investors very low. For example, a TSA might invest entirely in index funds. Many discount brokerages charge 0.15% or less per year to administer such funds. If TSA management and record-keeping functions could be performed for about 0.25% of investments per year, a TSA's annual expense ratio could be as low as 0.40%.

TSAs in practice

Besides IRAs or standard taxable accounts, accounts in 401(k) and other defined contribution plans could also serve as vehicles for TSAs. An employer could invest its matching contributions into TSAs for its employees and allow them to direct some, or all, of their own contributions into their TSAs.

During the accumulation stage, investors could also elect from a wide variety of investment options including stock, bond, and target-date strategies. Investors could be allowed to reallocate their assets (i.e., trade within their accounts) periodically.

When an investor contributes to her TSA, she would choose among payout options. These would include not only the lump-sum payout option chosen by Sally in the example above but also a variety of periodic and lifetime payout options. Lifetime payout options could be designed to mimic:

- Immediate, level-payment annuities
- Immediate, inflation-adjusted annuities
- Deferred annuities (i.e., longevity insurance)
- Joint-and-survivor annuities

Life insurance companies are well positioned to offer TSAs since they already deal with mortality data and trends. State insurance commissioners already know how to regulate pooled annuities, if not tontines. However, mutual fund or investment brokerage companies might also wish to offer TSAs since TSAs do not offer guarantees and thus are technically not contracts of insurance in the traditional sense of risk transfer.

No doubt, there will be some regulatory hurdles for TSAs, but we are confident that those hurdles can be overcome—as with any new financial product. All in all, we believe that TSAs can provide investors with a new and more valuable source of lifetime income, and we look

forward to their inception.

Jonathan Barry Forman, J.D., M.A. (Economics), M.A. (Psychology), is the Kenneth E. McAfee Centennial Chair in Law at the University of Oklahoma College of Law. He can be contacted at jforman@ou.edu.

Richard K. Fullmer, CFA, M.Sc. (Finance, Management), is the founder of Nuova Longevità Research. He can be contacted at richard.fullmer@nuovalongevita.com.