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Aging and Retirement

Fast Facts

Annuities Versus Tontines in the 21st Century: A Canadian Case Study

SUMMARY

Might retirement investment income tontines (RITs) coexist in today's market with their closest living cousin, the single-premium income annuity? A Canadian research team explores that question in this report.

Prevalent in the 17th century and later, tontines were a type of mortality-linked investment with a constant fixed cash flow shared among a shrinking number of participating survivors, the last of whom was promised gains at the expense of -- or subsidized by -- those dying earlier. Those products are now extinct, but 21st century experts are theorizing about reinventing a new form of tontines so they could potentially produce more yield than life annuities.

The authors tested this concept in the report. They examined payout rates for so-called "natural" RITs (an engineered design, with assumptions), and compared the performance results to life annuity payouts. The report identifies some interesting findings based on the modeling described in the report.

HIGHLIGHTS

- The report positions the hypothetical 21st-century retirement income tontine (RIT) as a contractual arrangement in which a group of people buy financial assets and agree to share the ongoing dividends and income based on survivorship.

- Any advantage of payouts from fixed-income tontines versus guaranteed life annuities depends on factors such as whether risk-free government or riskier corporate bonds are the underlying asset backing the tontine pool.

- The researchers used the risk-free (Canadian) government bonds as the pricing basis, during the period 1986–2000, and found that approximately 60% of the initial tontine payments exceeded the initial life annuity. By comparison, in 40% of the cases, the average life annuity issued by a Canadian insurance company would have yielded or offered more, likely because insurance companies are backing annuities with riskier corporate bonds.

- When using the (imputed) corporate bond curve as the tontine pricing basis, 100% of initial tontine payments would have exceeded the life annuity payouts at that time.

- The probabilities and relative values discussed above do not incorporate various product-related costs and cannot be addressed until such a real-world tontine product comes into existence.

- Therefore, no RIT design should be labeled as cheaper or more cost-effective compared to a single-premium life annuity sold by insurance companies. Rather, it is best to position them as an alternative product class along the longevity risk-return spectrum.

LINK TO FULL REPORT

Annuities Versus Tontines in the 21st Century: A Canadian Case Study
https://www.soa.org/Files/resources/research-report/2018/annuities-vs-tontines.pdf

METHODOLOGY

- The initial research focused on 1986 data and included initial pricing and actuarial assumptions with a defined 30-year retirement period during which the investor lived with the 1986 purchased RIT.
- The same analysis and results were summarized for 15 additional retirement years, between 1986 and 2000, to spread the tontine-versus-annuity comparison over more years.
- Results include the impact of using corporate as opposed to government bonds as the investment asset backing the tontine payments, plus there is an analysis of "skewness" in the tontine's payouts.
- The research used Canadian data but "the qualitative results are applicable to any country," according to the authors.

REPORT SPECS

- Published: March 2018
- Pages: 41
- Access: Downloadable pdf
- Research Sponsor: The Society of Actuaries (SOA) Retirement Section Research Committee
- Author(s): Moshe A. Milevsky, Thomas S. Salisbury, Gabriela Gonzalez, and Hanna Jankowski
- Content: Abstract; why tontines? why now?; what is natural about a tontine?; back to the year 1986; extending the horse race between tontines and annuities from 1987 to 2000; what if longevity improves; skewness and inflation; summary, conclusion and institutional loose ends; selected bibliography; technical appendix with computations; four tables with sub-tables; and two figures.
- Body of research: Canadian data on interest rates, mortality and prevailing annuity payouts, plus extensive research into tontines, annuities, and management of longevity risk. Sources include, but are not limited to, the 27 shown in the "selected bibliography."

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