PRIVATE ANNUITIES IN THE U.S.: SHARING THE RISKS

Douglas Fore, Ph.D.
TIAA-CREF Asset Management
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OVERVIEW

The U.S. in the 20th century
The TIAA-CREF system
  - TIAA in 1918
  - CREF in 1952
History and structure
Failures, successes and challenges
Building annuity markets
IN THE BEGINNING

A world without pensions
  - Primacy of family support
Undeveloped financial markets
  - How to make long-term commitments?
No regulatory regime
  - And no data!
ASSET MANAGEMENT WITH GUARANTEES

Managing assets subject to a constraint

- Payout guarantees
- Liquidity guarantees
- Mortality guarantees

In theory and in practice

The credit rating agencies

What the regulators think
TIAA STARTED IN 1918

Teachers Insurance Annuity Association

Professors did not have pensions

Original focus higher education and research

Accumulation and payout rates set at 4

  - Interest rates consistently higher than 4% in past decades
TROUBLE FOR TIAA

Interest rates fall below 4% in 1934
And stay below 4% for many years!!!
Longevity rises and rises
Capital call for TIAA
TIAA THINKS ANEW

The response:

- Accumulation: 3% guarantee plus additional amounts
- Payout: 2 ½% guarantee plus additional amounts
- Mortality projected 30-60 years ahead

TIAA annuities become participating annuities
CREF

College Retirement Equities Fund

- CREF Stock began in 1952

World’s first variable annuity

Asset allocation and investment strategy

Determining the payout

- Assumed Interest Rate (AIR) 4%

- Features total participation
ANNUITY GUARANTEE TYPES

Rate of return guarantees:
- Accumulation and/or payout

Liquidity guarantees:
- Introduces significant optionality

Mortality guarantees:
- Versus participating structure

*Guarantees are subject to the claims paying ability of TIAA or CREF.
RATE OF RETURN GUARANTEES

Role of regulators in setting guaranteed minimums
Duration of guarantees
Guarantees as constraints:
  - Asset selection
  - Asset allocation
LIQUIDITY GUARANTEES

TIAA liquidity constraints:
- During the accumulation phase
- During the payout phase

Asset allocation implications: search for illiquidity

Cashable guarantees:
- Know your deltas and your gammas
- Dynamic hedging issues
MORTALITY GUARANTEES

What people think of when they think of annuities
Duration of liability cash flows
Money’s worth of an annuity:
  - Mutual versus stock companies
  - Credit rating agencies
Participating annuities.
  - TIAA-CREF participants’ remarkable longevity
LONGEVITY

What do we know?
In 1840 life expectancy was 45 for Swedish women.
In 2000 life expectancy was 85 for Japanese women.
Over a period of 160 years…
Life expectancy increased 2.5 years every ten years for 160 years!
LONGEVITY AROUND THE WORLD

A century ago: Female life expectancy in Sweden was 60
Female life expectancy in Japan was ~ 37
Female life expectancy in Chile was barely 30
As of 2000:

- Japan 85
- Sweden +80
- Chile ~ 77
PROJECTING LONGEVITY

Will the pattern of 160 years continue?
If not, why not?
As countries develop life expectancy approaches record levels.
  - The trajectory (e.g. Chile) is really fast!
Recent improvements are at older ages.
Men remain the weaker sex.
Guarantees influence (dictate?) asset selection.

Need predictable cash flows

- Sets upper bound for equities

Guarantees and duration influence liquidity demand

Liquidity constraints imply ability to exploit illiquidity premium.

Regulators set risk based capital requirements.
CONCLUDING THOUGHTS

The asset management problem: The need for consistent cash flows.

Projecting longevity: How quickly will your population approach records?

Annuities can fit into a “default” model.

- But can lots of added features fit in too?

Are government mandates necessary?
FINAL WORDS

Annuity structure a good design for delivering lifetime income.

- Providers must get fundamentals right!

People want flexibility, but also simplicity.

Annuities are complicated, period.

Adding guaranteed features increases complexity and cost.
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