Pricing a surrender option into an annuity

For pricing, product and finance leaders at life insurers: what a surrender option does to an annuity's risks, how to design it so it can be priced and kept in the matching adjustment portfolio, and what the board paper should answer.

IN BRIEF

The problem

Retirees value an annuity they can get out of, but a surrender option exposes the insurer to selective surrenders and to losses on the assets backing the payments.

Why it happens

The option hands the timing decision to the policyholder, who will tend to use it when it suits them and costs the pool.

What to do

Design the surrender value and the price together, test them against the matching adjustment rules, and monitor surrenders from the first month.

01

What the option changes

An immediate annuity rests on a simple bargain. Everyone in the pool hands over their capital for a guaranteed income. Those who die early fund those who live longer, and the insurer backs the payments with long-dated assets it expects to hold to maturity.

A surrender option changes two parts of that bargain. Policyholders can leave the pool when leaving suits them, and the insurer may have to pay out cash on a date it didn't plan for. Both are behavioural risks, and both have to be priced from assumptions, because few annuities have ever offered the option and little experience exists.

Since the pension freedoms of April 2015, retirees have had real alternatives to an annuity, and a decision that can't be reversed once the cancellation period has passed is a harder sale. A surrender option answers that objection. It also makes the annuity one of the harder retirement products to price well.

02

The two risks the price has to cover

Selective surrender. The policyholders most likely to want their money back are those whose health has deteriorated, because the payments are now worth less to them than the cash. If the surrender value is set on the same basis as the price, each of them gains by leaving, and the pool loses the early deaths its price relied on.

ILLUSTRATIVE EXAMPLE

What one policyholder gains by surrendering

£100,000 annuity bought at 70	Value
Annual income bought	£8,260
Value of the remaining payments a year later, on the pricing basis	£97,000
Value of the same payments to the policyholder, now in poor health	£55,000
Gain from surrendering at the pricing-basis value	**£42,000**
Value on the pricing basis if rates rise by 1 point	£89,000

Illustrative assumptions: single life; Gompertz mortality rising 10% a year of age, with no future improvements; curtate life expectancy 18.5 years at 70 on the pricing basis; poor health means mortality rates four times the pricing basis, a life expectancy of about 8.5 years at 71; payments annually in arrears; discount rate 4% a year; no expenses or profit margin; values rounded to the nearest £1,000.

Market value. The insurer backs the payments with bonds of a similar duration. If the surrender value doesn't fall when those assets fall in value, policyholders have a reason to surrender when interest rates rise and buy a higher income elsewhere. The insurer then sells assets at a loss to pay them. In the example above, a one-point rise in rates cuts the value of the payments, and of well-matched assets, by about 8%.

03 Designing an option that can be priced

Settle the design and the price together. A product team that hands its pricing actuaries a finished design tends to get back a poor annuity rate, a long list of conditions, or both. The main levers are these:

- **The surrender value basis.** Linking it to the market value of the backing assets removes most of the interest rate risk. Setting it on a mortality basis that doesn't reward poor health, or asking for health evidence, limits selective surrender.
- **When the option can be used.** A window in the early years, or fixed dates, is easier to price than an option that stays open for life.
- **How much can be taken.** A cap or a partial surrender limits the cash any one policy can draw.
- **What the customer is told.** Under the Consumer Duty's consumer understanding outcome, the customer should be able to see what they would get back, and when it would be less than they paid.

04 Keeping it in the matching adjustment portfolio

For an insurer that holds annuities in a matching adjustment portfolio, the option has a capital test as well as a pricing one. The PRA's rules allow a surrender option in that portfolio only where the surrender value does not exceed the value of the assets covering the obligations at the time the option is exercised (PRA Rulebook, Matching Adjustment Part, rule 2.2(4)). The PRA's stated preference is to compare the surrender value with the best estimate liability (supervisory statement SS7/18).

A design that fails the test at any point the option can be used puts the business outside the matching adjustment. That can change its capital cost by far more than the option itself adds to the price. Test the surrender value against the rule across the scenarios in the pricing basis, not only on the central one, and show the result in the board paper.

> FROM EXPERIENCE
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> At Partnership I delivered the pricing methodology, assumptions and board paper for the Partnership Enhanced Choice Annuity, the UK life industry's first annuity with a surrender option, in under two weeks. I worked directly with the CFO and sat on the Retirement Pricing Committee alongside executive board members.
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> Earlier, at Prudential, I set surrender and transfer values on conventional with-profits and deferred annuity products. Both roles taught me the same thing: the number that matters most to a board is what a surrender value costs when the assumptions behind it turn out wrong, not only what it costs when they hold.

05

Monitoring after launch

Surrender experience will be thin for years, so start collecting it on day one. Record who surrenders, their age, the time since purchase and, where you hold it, any health information. Compare actual surrenders with the pricing assumption every quarter, and agree in advance the level of difference that triggers a repricing or a change to the terms for new business.

Questions for the board

01 Who is most likely to use the option, and what happens to the pool's mortality if they do?

02 How does the surrender value move with interest rates and with the value of the backing assets?

03 Does the surrender value pass the matching adjustment test at every point the option can be used, and how was that tested?

04 What surrender rates have we assumed, what are they based on, and how will we monitor them from the first month?

05 Can a customer see what they would get back, and when it would be less than they paid?

06 If surrenders run at twice the assumed rate, what does that cost, and who would see it first?

A surrender option can make an annuity easier to sell without making it unsafe to write. That depends on settling the design and the price together, and on a board paper that shows the capital test passes at every point the option can be used.

If this is on your table, a 30-minute conversation is usually enough to tell whether I can help.

Talk to Mark

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ABOUT THE AUTHOR

Mark Woodruff is a Chartered Actuary (FIA) and Chartered Financial Planner (FPFS). He spent 15 years pricing and building products at Aviva, Prudential, Partnership and St. James's Place, then more than seven years founding and running advice firms through to a substantial sale. Through Mark Woodruff Consultancy he works with financial services firms on product, pricing, distribution and governance.

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