

A HOW TO GUIDE TO STARTING YOUR OWN ANNUITY BUSINESS



In exchange for a lump sum of money, an annuity provider provides annuitants a guaranteed income for life. To be a successful annuity provider, all one has to do is to follow the following recipe.

1. Sell some annuities
2. Calculate reserve + capital required
3. Invest reserve + capital in assets
4. Expect to earn a profit as time passes

To say the devil is in the detail will be a significant understatement, but we will try, in a page, to highlight some of the complexities. There will be a proportionate exposition on the all-important ingredient, the Matching Adjustment ("MA"), as well as a less proportionate expounding on a favourite topic of mine, Equity Release Mortgages ("ERMs").

Returning to our four-step model, all we will say of the first step is that it is not all about marketing, distribution and customer service. Often, there are actuaries in pricing teams working out what should be charged, informed (hopefully) by a feedback loop from Step 2, but usually heavily influenced by market conditions.

The annuity sellers have reasonable discretion and actuaries in the reserving and capital teams are like the examiners. All going well, the examiners will do their calculations (Step 2) and show that the business is profitable and that there is sufficient capital. Most of the actuaries in an annuity business would be found here. The astute reader of the back pages of the Actuary would have noted that such teams have expanded in recent years and the key reason, I assert, is regulation. A possibly unintended consequence of Solvency II is that the insurance industry (not just annuity providers) has to produce multiple balance sheets and juggle metrics between them, a common challenge being to optimise IFRS profits while meeting Solvency II capital constraints.

A result of Step 2 is that the Investment Team then knows what assets to buy, Step 3. Not all assets are equal. Assets backing reserves have to be invested in safer assets. Assets backing the Solvency Capital Requirement or assets in surplus can be more risqué. Nowadays, especially in the annuity business, the Solvency II definitions of what determines a safe asset have created opportunities for actuaries to sit within Investment teams.

Finally, we come to Step 4. If premiums received exceed reserve and capital, there is profit to be taken on day one. The likelihood of this, especially after Solvency II, has reduced dramatically, so more likely than not, there is a capital strain. The reserves have a bit of prudence, so if actual experience pans out in line with expectations, there will be profits in the form of reserve releases. The capital is further prudence, there to buffer against 1 in 200 stresses, so unless such stresses occur, capital is expected to be released as well, over time. Monitoring this is an actuary intensive business.

Matching Adjustment

A distinctive feature of the annuity business is the importance of the MA. Solvency II regulations dictate that the value of the liabilities should be its cash flows discounted at the risk-free rate ("Liab@RF"). However, an insurer may apply for the MA or Volatility Adjustment ("VA") and this would allow the insurer to recognise that its assets earn a liquidity premium above the risk-free rate. To be precise, the liability cash flows can be then discounted at the risk-free rate plus an MA or VA. The VA is dictated by EIOPA and as at end August, it was 0.20% for the UK. In contrast, insurers have reported MA of more than 1%. The MA is calculated by insurers and roughly, it is the gross spread of the asset portfolio less the Fundamental Spread ("FS"). The FS represents the expected loss due to defaults and downgrades.

Equity Release Mortgages

Our regulator, the PRA, has opined [see <https://goo.gl/ED6LbJ>] that Equity Release Mortgages is a suitable asset to back annuity liabilities, not least because it hedges some of the longevity risk. The PRA, however also published a supervisory statement, SS3/17, which introduces a cap to the MA for ERMs. In a recent consultation paper, CP13/18, this cap was defined to be the risk-neutral price of ERMs, calculated using the Black-Scholes pricing model. The advantage is that this has the potential of simplifying calculations and would help to create a level playing field. My opinion, however, is that this does not make up for a key disadvantage. That is, this cap goes against the principle of the MA, which I should note, was fought hard for by the PRA. The cap introduced in SS3/17 can be summarised as follows

$$\text{Asset Value} + \text{Value of MA} \leq \text{Risk-Neutral Price}$$

From the definition of the MA, we have, roughly,

$$\text{Asset Value} = \text{Liab@RF} - \text{Value of MA} - \text{Value of FS}$$

Combining the two equations, we have

$$\text{Liab@RF} - \text{Value of FS} \leq \text{Risk-Neutral Price}$$

I believe this highlights an inconsistency the cap creates. On the left-hand side, we have liability cash flows projected on the real-world basis. On the right-hand side, however, we have cash flows projected on the risk-neutral basis. This suggests the FS is valuing a change in bases, not just defaults and downgrades.

Alternatively, or as an example, if we applied the same cap to corporate bonds, we would have asset value = risk-neutral price as corporate bonds are priced in the market. Consequently, from the cap, the MA would be 0.

Much more can be said, but I must conclude, and I will do so with the rallying slogan, "Price ≠ Cash Flows". Feedback welcome.

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PREMIUMS

RESERVES

CAPITAL



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