# Trends in Annuity Policyholder Behavior

By Peter Gourley

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Is it just me, or are annuity experience studies actuaries walking a little taller these days? More spring in their step? Maybe even making eye contact?

Perhaps that's because of the exalted importance of understanding policyholder behavior to principles-based reserves and capital and the continued importance of that knowledge to product development in order to set appropriate charges and create accurate financial projections. To the font of this wisdom, the experience studies actuary, all hail!

But with increased importance comes increased difficulty. Policyholder behavior is key to the actual cost of guarantees commonly offered on both variable and fixed index annuities. It is hard to measure and predict because of its many dimensions, the possibility of either false or missed positives, and the difficulty of knowing the mindset of these sometimes very human contract owners.

## What's Policyholder Behavior?

First, a step back. By policyholder behavior, I mean policyholder actions in response to options granted by the annuity contract, particularly those under contract guarantees. For example, a policyholder can surrender or persist, withdraw money either under a guarantee or on an ad hoc basis, exercise an annuitization option, or transfer funds among sub-accounts.

When evaluating policyholder behavior, we want to answer some key questions, such as

- What are the main drivers of each behavior?
- What is their magnitude, shape, and stability?
- How do they interact?

These questions are best addressed, where possible, with a study of actual, relevant, and plentiful experience. Cue the experience studies actuary.

## What's Happening Out There?

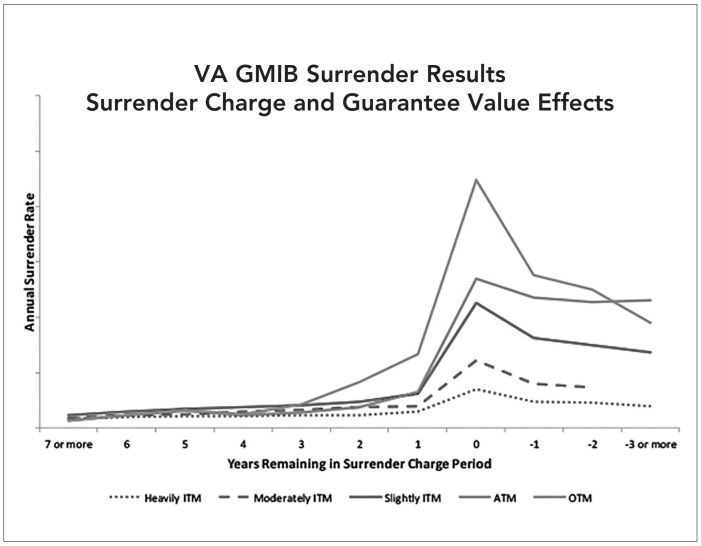
These concepts can be illustrated by considering some real-world results. The source for these is the various multi-company annuity industry experience studies by Ruark Consulting, with the most recent covering the 2008–13 timeframe. Let's focus first on two examples of policyholder behavior cited above, persistency and partial withdrawal, and see what lessons these recent studies can teach us.

**Lesson 1: Policyholders are rational**

Persistency is an assumption to get, Goldilocks' style, just right. Too little persistency and the company doesn't collect enough fee income to offset acquisition costs. Too much and exposure to guarantees risk may be more than anticipated.

As might be expected with rational policyholders, the contract's surrender charge is a key driver to persistency behavior. During the surrender charge period, when cashing in comes at a cost, surrender rates are in the single digits, sometimes low single digits. But rates can be five or more times higher in the first year after the end of the surrender charge period (Contingent Deferred Sales Charge, or CDSC), when the only immediate cost of surrendering is not receiving a prospectus every year. Rates after the initial post-CDSC shock duration settle back to something in between the two extremes, perhaps around 10 percent.

Furthermore, our rational policyholders hold on to contracts with more value. Having a living benefit guarantee present on the contract is valuable. Having a guarantee that is currently worth more than the account value is even more valuable. Both of these effects can be seen in the following picture,[1] which shows the surrender rate for variable annuity contracts with a GMIB rider by the years remaining in the surrender charge period and by the relativity of the rider's benefit base to account value, from heavily in-the-money through out-of-the-money (that is, benefit base is less than account value).

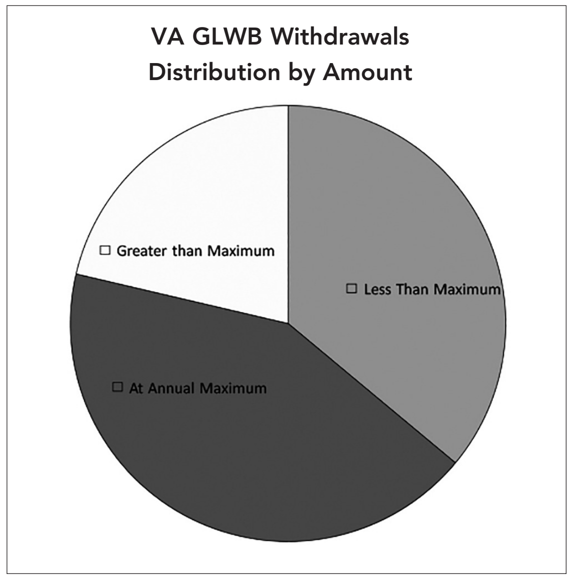



See, I told you: rates are low initially, peak immediately after the CDSC period, and decline to an ultimate rate. They also follow a rational hierarchy of having markedly better persistency for more valuable guarantees.

Rational behavior, once the context of rationality is understood, is then predictable, and predictable behavior makes for reliable assumptions. Yup, those policyholders sure are rational.

**Lesson 2: Policyholders are not rational**
Except when they're not. Consider, for example, partial withdrawal behavior.

This behavior is of course especially relevant in presence of a withdrawal-oriented guarantee. Measuring the behavior involves both the frequency (do they or don't they?) and the severity (if they do, how much?) of withdrawals. From the standpoint of the guarantee, the greatest risk to the issuing company comes when the policyholder regularly withdraws an amount equal to the guaranteed annual maximum amount, which runs down the account value but does not diminish the guarantee. But what do we see? Another picture—pie chart this time! This shows, for VA owners with a lifetime GMWB rider who take a withdrawal, the proportion by annual amounts withdrawn, either at the annual maximum or less than or greater than that amount.[2]




Those withdrawing less than the guarantee are leaving guarantee money on the table, while those taking more are degrading the guarantee (the typical rider reduces future guaranteed lifetime income when a withdrawal in excess of the annual maximum is taken). These two extremes make up the majority of withdrawals. From an actuary's point of view, these owners are not maximizing the present value of benefits! Unless, of course, the owner's personal discount rate is very high; that is, they need the money now.

In the same vein, note that in the "rational" persistency picture earlier, while surrender rates get lower with increasing value of the guarantee, the rates never go to zero, even for the most heavily in-the-money contracts. Immediate circumstances can sometimes trump long-term value. Perhaps that's rational in some context.

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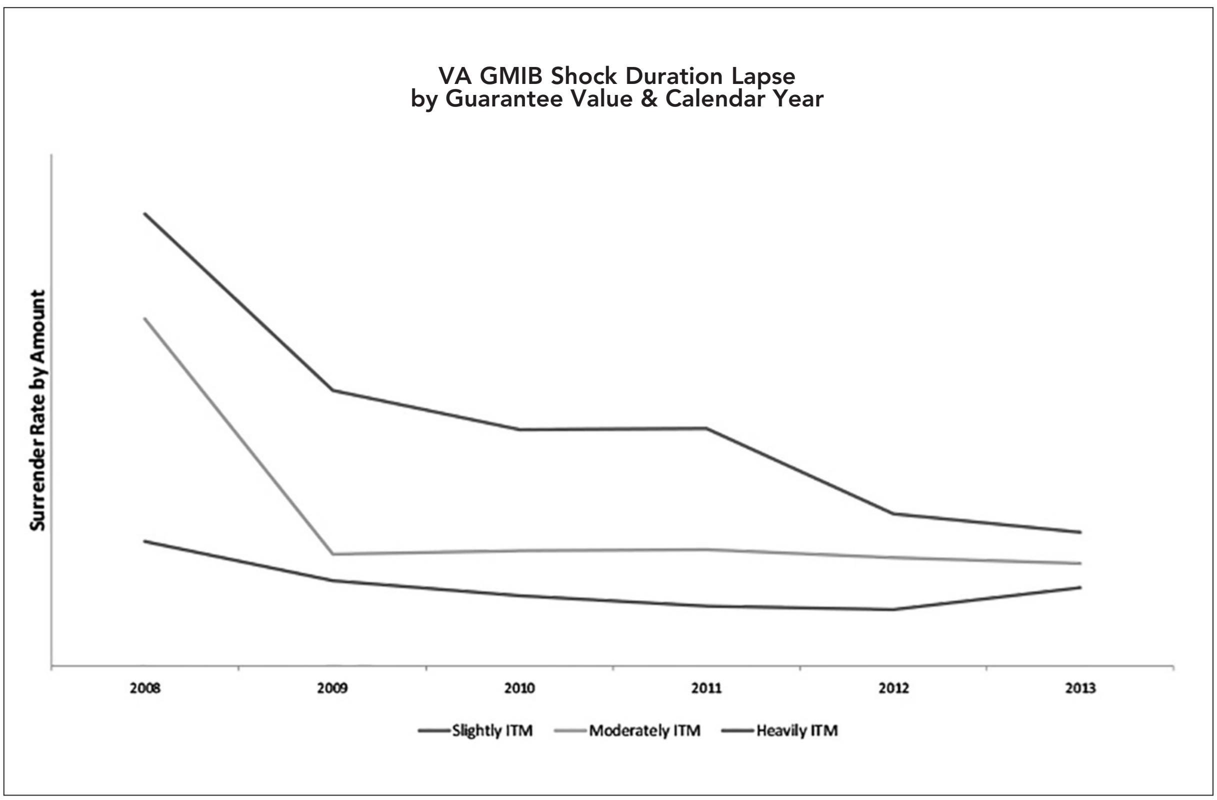
**Lesson 3: Not all data is created equal, Part 1**

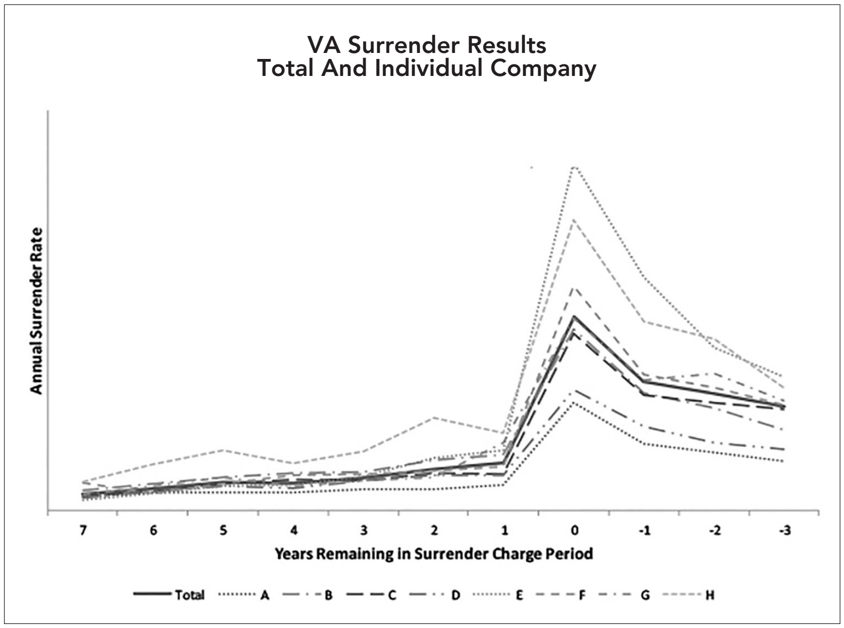
When evaluating policyholder behavior, we want all the data we can get. After all, in the interests of credibility, more data is better—except when it isn't. Data must also be relevant, and relevance may have an expiration date. Consider the behavior of variable annuity contract owners with a GMIB rider. Over the past several years, their surrender rates have not been constant relative to the value of the guarantee. The same level of value (in-the-moneyness) now results in higher persistency than it did five years ago, as illustrated below.[3]

Granted, there are significant environmental differences between 2008 and 2013: lower interest rates, higher volatility, and, consequently, less risky VA rider designs. In fact, that's the point. Those changes have made otherwise perfectly acceptable 2008 experience not as relevant for looking at current behavior.

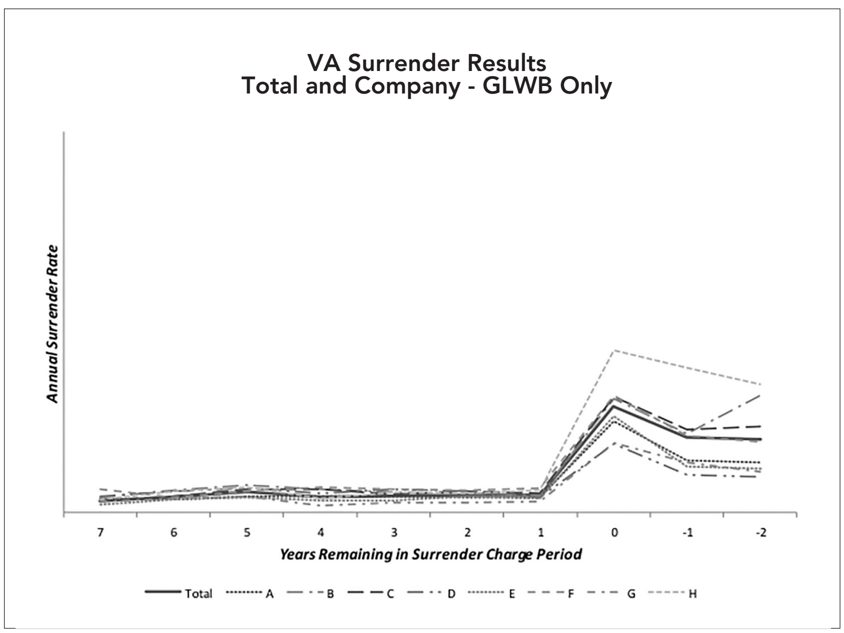


**Lesson 4: Not all data is created equal, Part 2**

So, relevance in experience data is desirable. But, if from the same time period, so is volume of data. Which wins out? For example, experience from your own company is more relevant to your company than aggregate industry results, but the latter is much weightier. Look at the following picture, which shows individual company surrender rates (again, by years remaining in the surrender charge period) from a recent study.[4] As these were sizable companies with fully credible data, the fairly wide dispersion of results isn't due to random fluctuation. If you were an actuary at one of the outlier companies, how would you set your assumptions?




First, of course, you'd consult with your experience studies expert, who would adjust for known drivers to tease out the true causes of behavior. In this case, when we reflect the effect of the presence of guarantee riders, the conflict turns to harmony. Here are the same companies' surrender rates but restricted to just their lifetime GMWB blocks.[5]




We're down to only one outlier on the high side now. What should that company do? To quote an old slogan, ask an (experience studies) actuary! That is the real lesson from these experience studies.

## ENDNOTES

1 From Ruark Consulting's 2013 VA Surrender Study
2 From Ruark Consulting's 2013 VA Partial Withdrawal Study
3 From Ruark Consulting's 2013 VA Surrender Study
4 From Ruark Consulting's 2013 VA Surrender Study
5 From Ruark Consulting's 2013 VA Surrender Study