Market turmoil: What does it mean for annuity policyholder behavior?

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Executive Summary

We offer insights on expected annuity policyholder responses to recent financial market turmoil, gleaned from our studies of annuity policyholder behavior since 2007.

Variable annuity writers should expect:

- *Greater persistency overall, but elevated surrenders for at-the-money GLWB*
- *Greater income utilization, especially for GLWB after the deferral incentive period and "hybrid" GMIB*
- *Greater GMIB annuitization elections, especially on traditional "pro-rata" benefit forms*

Fixed indexed annuity writers should expect:

- *Greater persistency for GLIB, and lower persistency without GLIB*
- *Greater income utilization for GLIB*

COVID-19 impact on mortality:

- *Will likely depend on the level of containment among the general population at retirement ages, with potential differences between those with and without living benefit guarantees*

Ruark is uniquely positioned to help as risk management takes center stage:

- *We have the data from past times of crisis – monthly policyholder behavior and mortality data going back to 2007 covering about 70% of the market with over $1 trillion of current account values*
- *We have developed predictive analytics techniques that use company- and industry-level data to help our clients improve their annuity pricing, valuation, and risk management models. Our approach is rigorous, transparent, and tailored to each company, allowing for quick implementation and quantification of improvement in financial risk profile from what they can do if limited to their own data.*

Since closing at an all-time high on February 19, the S&P 500 has fallen over 35% before rebounding earlier this week. Prices of commodities – particular oil and natural gas – have fallen by comparable amounts. The VIX, a measure of implied volatility on short-dated options, is at higher levels than during the 2008 crisis. US Treasury yields have hit record lows, and although they've recovered somewhat, the 10-year rate is trading below 1.0% and the 30-year below 2.0%.

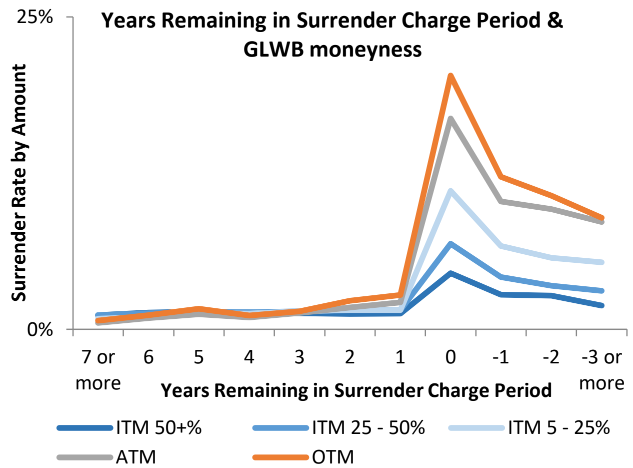
This market turmoil is a perfect storm for annuity writers – one that makes market risk management especially challenging. However, we believe we can help reduce some uncertainty with regard to an important element of annuity risk: annuity policyholder behavior.

Variable annuities

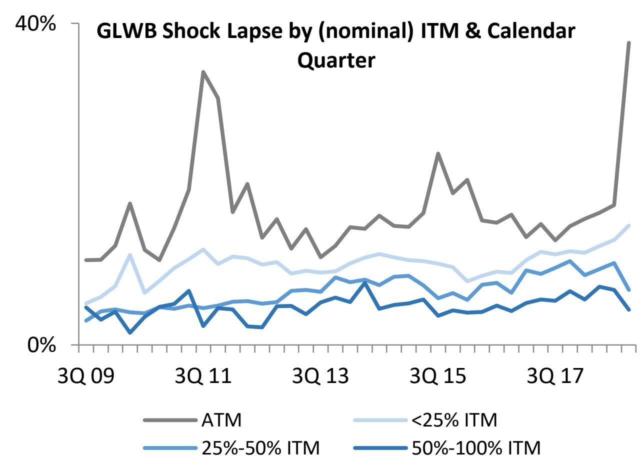
Let's start with what we know about variable annuity behavior. VAs with embedded guarantees such as GLWB and GMIB are subject to three main behaviors: Surrender, income utilization, and annuitization. Each of these is sensitive to moneyness, that is, the relationship between account values and the value of the guarantee.

First, consider surrenders. As account values fall, surrenders also fall. The guarantee becomes more valuable, so policyholders keep the product. Whether moneyness is measured on a nominal basis (account value vs. benefit base) or an actuarial/economic basis (account value vs. present value of guaranteed income), the relationship is consistent.

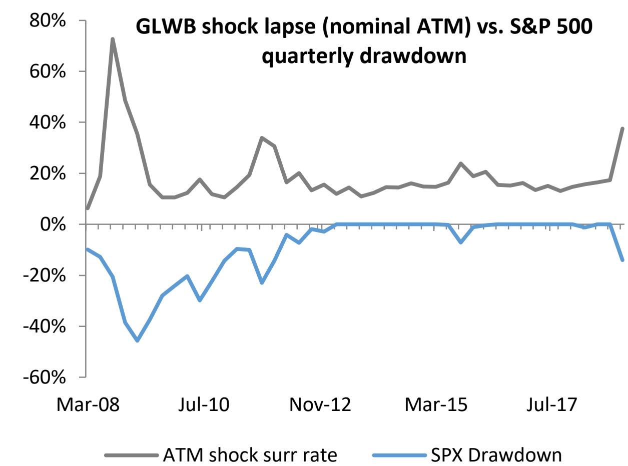
In light of current equity market drops, we expect policies to be deeper in the money, and persistency to increase. Fortunately, virtually all of our clients already reflect this relationship in their modeling parameters to some degree.



However, in our experience, changes in the moneyness level are not the only way markets influence surrender behavior. Consider the time series shown below, which displays surrender rates at the "shock" duration (i.e., immediately following the expiration of surrender charges). Whereas the surrender rates for in-the-money contracts are stable, the rate for at-the-money contracts exhibits periodic spikes.

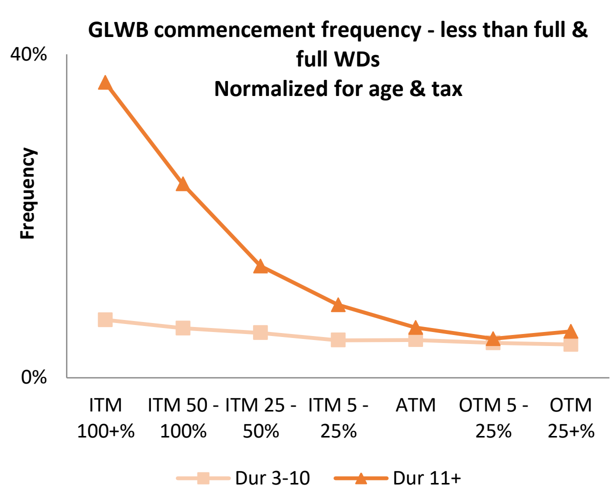


Note that those spikes occurred during other periods of market stress. So let's isolate the ATM line and extend it back to the 2008 crisis. Let's also compare it to the quarterly drawdown in the S&P 500, that is, the percentage decline since the last high:



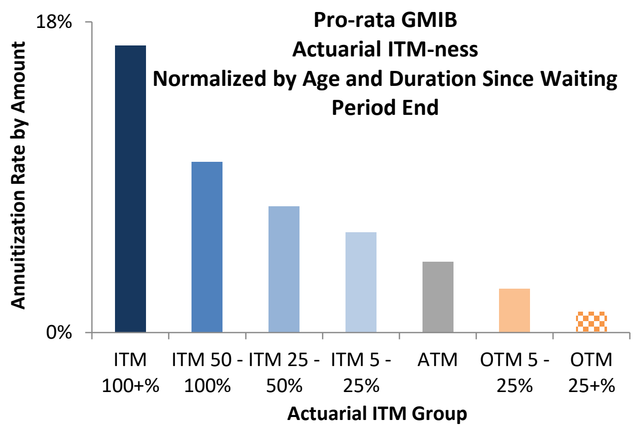
The relationship is unmistakable. The last time we saw a drawdown of 40%, the ATM shock surrender rate also climbed above 40%. VA writers should not be surprised to see similar behavior among policyholders in Q1 2020.

While surrenders usually get the most attention *vis a vis* moneyness, other behaviors are also affected. For many years, we and (our clients) did not observe any relationship of moneyness to income commencement for GLWB and GMIB. However, as more contracts have passed the 10-year mark, where income deferral incentives are most common, we have been able to see new patterns. Specifically, we observe very strong sensitivity to moneyness – after deferral incentives expire.

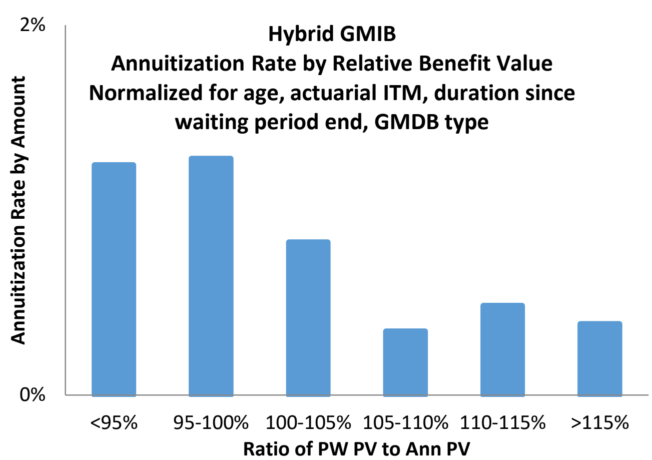


In the current market environment, VA writers should expect greater income utilization, particularly among older contracts.

GMIB annuitization is another behavior that exhibits sensitivity to market levels. Once again, as the account value falls, the guarantee becomes more valuable. With GMIB, we must also account for changes in annuity purchase rates; as interest rates fall, the purchasing power of the account value is further reduced. Both of these effects drive policyholders to exercise at greater rates. This is the case regardless of whether the GMIB is the traditional form, or the "hybrid" form that allows dollar-for-dollar withdrawals up to an annual limit.



However, with regard to hybrid GMIBs, there is a counterbalancing factor: annuitization rates are further influenced by the relationship of the withdrawal benefit to the annuitization benefit. As interest rates fall, the withdrawal guarantee becomes more valuable relative to the annuitization guarantee. So in the current market environment, our clients should expect to see greater use of the withdrawal benefit, perhaps tempering greater annuitization rates from lower account values.

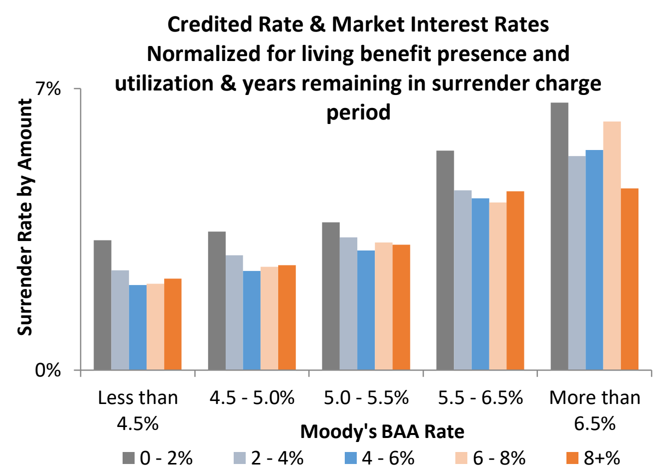


In summary, VA writers should expect to see greater persistency overall, but elevated surrenders among ATM contracts. They should expect greater income utilization, especially among (a) GLWB contracts past their deferral incentive periods and (b) hybrid GMIB contracts. And they should expect higher GMIB annuitization rates, especially on traditional (pro-rata) benefit forms.

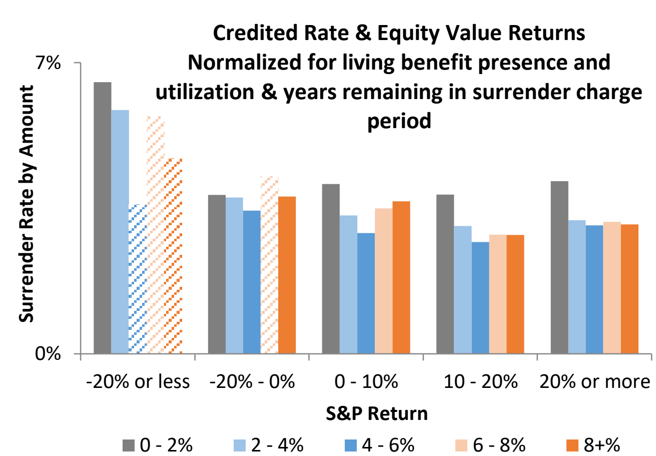
Fixed indexed annuities

Fixed indexed annuities differ from VAs in that they are much less sensitive to equity market fluctuations. Nonetheless, there are important ways in which policyholder behavior on this product, too, responds to volatility in the market.

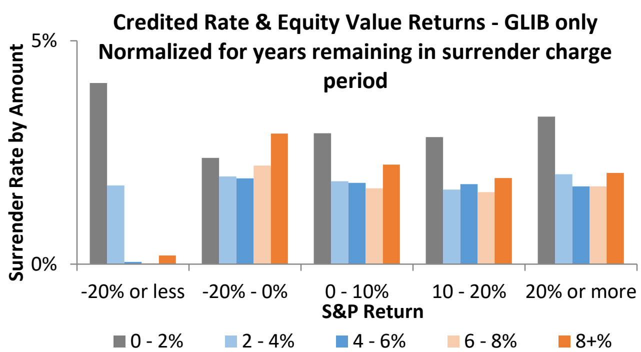
Credited interest rates are a key driver of persistency on FIAs. This is not only a matter of the absolute rate – surrenders are especially high when credited rates are below 2% -- but also the availability of attractive market alternatives. When competitive market rates fall, all else equal, surrenders fall too.



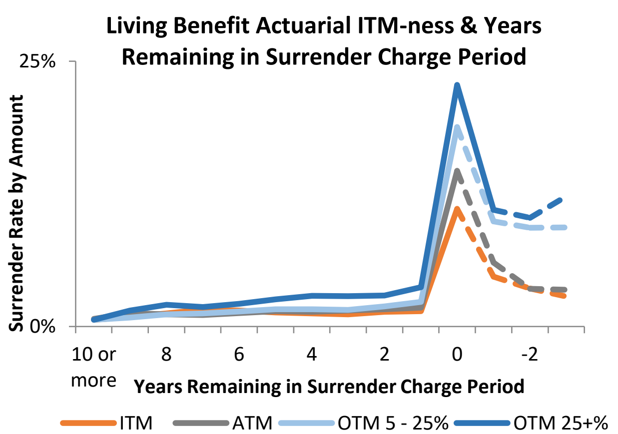
Beyond interest rates, we must also consider equity index performance. An FIA is distinct from a traditional fixed deferred annuity in that credited rates reflect participation in index crediting strategies. Policyholders accept lower fixed returns in exchange for the potential of market upside. But experience suggests that when that upside does not materialize, policyholders become dissatisfied, and surrender at greater rates. Equity market drops lead to higher surrender rates.



An exception, though, is observed on policies with a guaranteed lifetime income benefit (GLIB). Where a GLIB is present, presumably the policyholder's main objective is lifetime income, and the lifetime income stream is not reduced by poor equity market performance. On those policies, surrenders appear largely insensitive to equity returns.

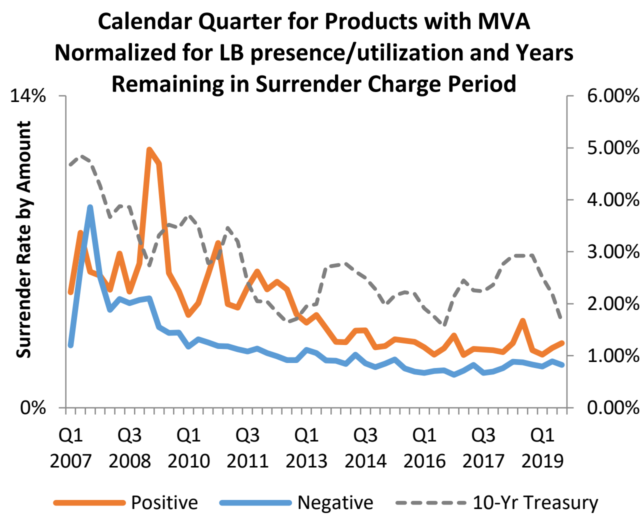


What we do see on GLIB contracts is sensitivity to actuarial moneyness – the relationship of account value to the present value of guaranteed income. The more valuable the guarantee is in economic terms, the more likely the policyholder is to persist. In contrast to VA, on FIA actuarial moneyness is not driven by account value fluctuations, because of the nature of FIA interest crediting. Rather, the FIA GLIB goes further in the money as interest rates fall, increasing the present value of future payments.

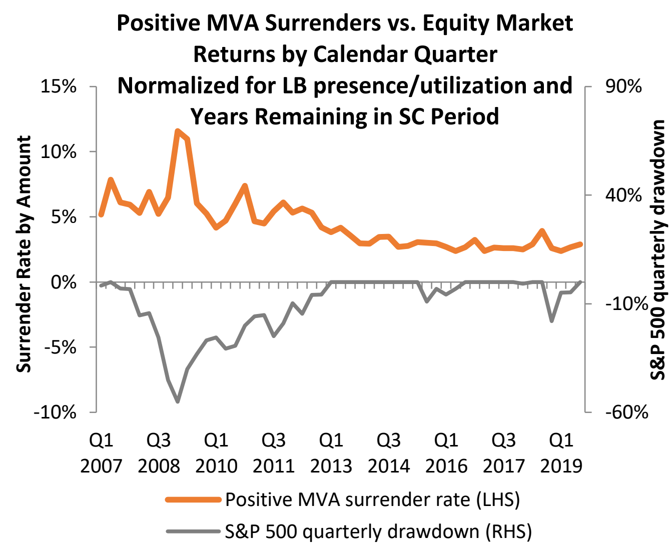


A secondary way in which financial markets affect surrender behavior is through a market value adjustment (MVA). An MVA is designed to reduce the incentives and costs of disintermediation – that is, when increases in market interest rates make it advantageous for a policyholder to surrender the annuity and invest the proceeds in a higher-yielding instrument.

Although a properly designed MVA should neutralize the gains or losses, making the policyholder indifferent to market interest rates, we observe that policyholders are not indifferent. Rather, surrender rates for policies with a positive adjustment exceed those for policies with a negative adjustment or no adjustment. In the aggregate, policyholders act as though a positive MVA is a bonus rather than a mechanism to make both parties whole. Note that a positive MVA is generated when interest rates fall relative to the interest rate at the time of the initial investment.



Furthermore, as we examine the historical spikes in surrender rates, we again note that they occurred when equity markets experienced sharp declines. Isolating the positive MVA surrenders and comparing to the S&P 500 quarterly drawdown, once again we see a striking relationship:



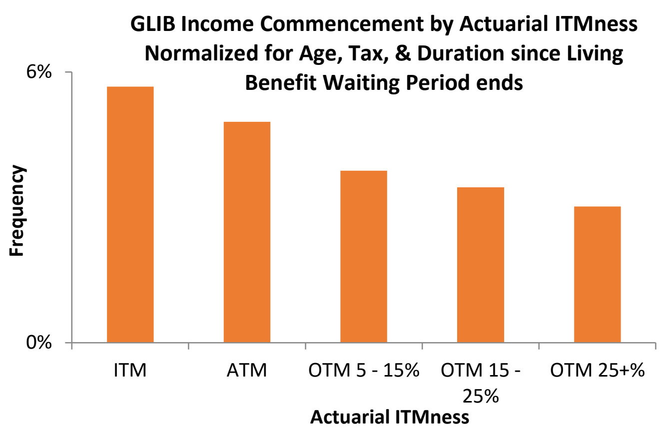
Given recent declines in interest rates, it is reasonable to expect more MVA policies to have a positive MVA than before. And given the recent S&P 500 drawdowns, past experience suggests the surrender rate for these positive-MVA contracts could be 10% or more on an annualized basis.

So to sum up for FIA:

- Lower credited rates lead to higher surrenders, somewhat offset by the fact that lower competitive interest rates reduce surrenders
- Lower interest rates make living benefits more valuable, leading to greater GLIB persistency
- Equity market drops lead to higher surrenders on policies **without** GLIB
- Equity market drops lead to higher surrenders on policies with a positive market value adjustment. There will be more of these as interest rates fall.

Taken together, the most likely scenario for FIA writers is that persistency will slightly improve on policies with GLIB, and deteriorate for policies without GLIB, in response to recent financial market movements.

FIA income utilization is also affected by recent market movements. Specifically, we see a relationship between moneyness and income utilization. When benefits are more valuable, policyholders exercise at greater rates. Lower interest rates make living benefits more valuable, so we should expect to see greater rates of income utilization in response to recent declines in interest rates.



Mortality

Our discussion would be incomplete without mentioning mortality. While not technically a behavior, mortality is another way for an annuity contract to terminate.

COVID-19 is a deadly pandemic. That said, it is too early to know the extent to which it will affect annuity policyholders specifically. Assuming the spread of the virus is contained among the general population, we can expect it to be contained among annuity policyholders too. However, we note that the virus is more deadly among older individuals, and annuity policyholders are older, on average, than the general population.

We also note that annuity mortality has exhibited strong anti-selection effects. Both VA and FIA mortality is lower among policyholders with a living benefit than among those without, for example. This would suggest potentially higher susceptibility to a health shock among VA policyholders with only a GMDB than among living benefit contracts.

Looking forward

As market volatility and low interest rates persist, risk management takes center stage for annuity writers. We remain ready to help our clients manage their policyholder behavior risk with greater information and insight:

- Our dataset is unparalleled, containing seriatim monthly policyholder behavior and mortality data going back to 2007, covering about 70% of the market, with over $1 trillion of current account values. It includes historical crisis and post-crisis periods and emerging data in key areas (e.g. long-term income commencement and moneyness sensitivities).
- We have developed predictive analytics techniques that use company- and industry-level data to help our clients improve their annuity pricing, valuation, and risk management models.
- Our approach is rigorous, transparent, and tailored to each company using credibility theory. It allows for quick implementation, and quantification of the improvement in model predictive power and financial risk profile over what a company can do if limited to their own data.

Please contact us if you would like to discuss how we can put this to work for you.

And most importantly, from all of us at Ruark Consulting, we wish you and those close to you health and stability in these turbulent times.

Eric Halpern is the Chief Operating Officer of Ruark Consulting, LLC.

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