Highlights of 2020 Variable Annuity Policyholder Behavior Industry Studies

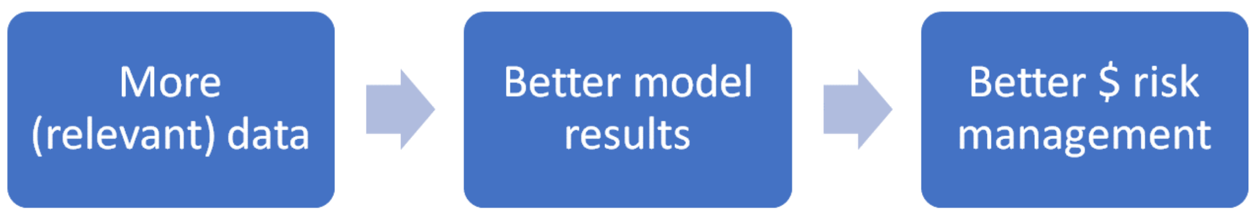
Behavioral Analytics Advisory Council – Notes for January 21 2021 Call

If you were able to join the call, thank you! Here is the notes document that I promised. If you were not able to join (or if you like a good rerun), the **video** is available on our website.

Today we will focus on a major highlights and changes in 2020. Lots of additional detail in the press release and website post.

I would like to start with a quote from an incredibly quotable expert on data analytics.

"We don't have better algorithms. We just have more data." - Peter Norvig, Google Director of Research



You have a tough job setting modeling assumptions for pricing, hedging, reserve and capital assumptions. Doing it poorly can mean financial catastrophe for your company; doing it well can be a big competitive advantage. This is why we do what we do at Ruark, especially now.

We know that **more (relevant) data and better modeling costs money, so you need to build your business case internally**. And this goes better when you use your company's Key Performance Indicators, preferably ones that are in dollar terms. Refer to article that I co-authored in "The Actuary" magazine. This will transform the decision from a mere short-sighted budget question to an enterprise risk management question that warrants higher level consideration by your company's leadership. Links to examples on our website: our experience with VA and FIA policyholder behavior data is that intelligent use of relevant industry data can provide a 1000x return on investment, even for large companies.

With this in mind, the last year brought us from theory and case studies to reality: **VA policyholder behavior changed in 2020**.

Financial crises are rare, so we need to extract maximum analytical insights when they happen; the last one being the 2007-8 credit crisis and subsequent recession. **Variable annuities issued over the last decade had never experienced a financial crisis prior to 2020**.

Before diving into the changes in 2020, big thanks to all of you: these studies brought us up to 72 annuity industry studies since we started this type of work in 2007; 20 variable annuity companies participated in 2020; 16 Behavioral Analytics Advisory Council calls since we started them in 2016; and all of this work through the 6 members of Ruark's analytics team.

Data Highlights

Seriatim monthly, from January 2008 through June 2020, from 20 companies. For GLWB, (nominal) in-the-money exposures increased 23% and deep in-the-money exposures increased 40%. For recent vintage GLWB, deep in-the-money exposures increased 50%.

Analytical Highlights

1. **GLWB moneyness sensitivity changed in 2020**. Essentially, the moneyness curve steepened – lower surrender rates for in-the-money (about 3% at the extreme), and even higher surrender rates for out-of-the-money. Very significant change.
2. **GLWB income commencement rates decreased in 2020** (about 13% at the extreme) for those with highest propensity to exercise – in-the-money and after deferral bonuses. Also a very significant change.
3. **GLWB/GMIBs are up to 65% at maximum income utilization**, continuing recent trend.

And much more in the website post, including "double shock" free partial withdrawals also spike along with surrenders; systematic withdrawal program impact on surrenders; our usual detailed analysis of moneyness sensitivity on both nominal and actuarial bases; new exploration of differences by distribution channel; evolution of GMIB annuitization rates in this low interest rate environment with splits for hybrid and pro rata.

What to do next? Submit order forms for our 2021 FIA and VA studies, including VA mortality, by February 15 2021 to take advantage of lower (by $10k per study) pricing. Thank you, this helps us a lot in our planning and production cycles. Check the box on page 2 to schedule a discussion of the model development services that I mentioned earlier. These are customized engagements that work best collaboratively from the beginning.

2021 FIA studies will include data through Q3 2020, so we will have our first chance to see if and how FIA policyholder behavior may have also changed in 2020. Target completion in Feb.

2021 VA studies will include data through year-end 2020, so we will see how the second half of the year compares to the first half. Target completion in Jun.

2021 VA mortality studies – data request includes indicators for COVID-19-related deaths so that we can try to analyze this directly. Target completion in Nov.

In summary, policyholder behavior changed in 2020, and we will see what happens in 2021. This makes your job even tougher. 2020 was incredibly difficult for all of us and we are not out of the woods yet. Thankfully, crises are rare. But analytically, it is vital that we get the most out of them when they come along. Hopefully this has given you a sense of what we have to help you meet the challenge and build your business case, whether it is through our experience studies or modeling engagements – more (relevant) data means better models, and that means better financial risk management.

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