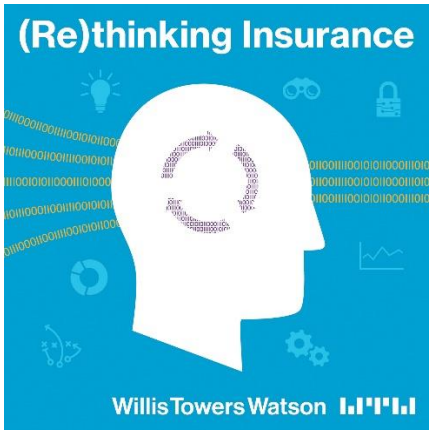

Episode 11: Emerging mortality experience in U.S. individual life insurance

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KIM STEINER: Well, this study-- we're, for the first time, studying lapse and surrender experience. We've always collected that data, and we decided this time that would be something that's valuable to the participants-- is to go ahead and study that data as well and release the findings there.

NARRATOR: You're listening to Rethinking Insurance, a podcast series from WTW, where we discuss the issues facing P&C, life, and composite insurers around the globe, as well as exploring the latest tools, techniques, and innovations that will help you rethink insurance.

CARRIE KELLEY: Welcome to Rethinking Insurance. I'm your host, Carrie Kelley. On today's podcast, we will be discussing the findings of the Willis Towers Watson TOAMS 5 industry mortality, and new for this year, lapse study. My guests today are Kim Steiner, a senior director at Willis Towers Watson, based out of our Dallas office, and Boyang Meng, a manager in our Atlanta office. Welcome, Kim.

KIM STEINER: Thanks, Carrie. Happy to be back.

CARRIE KELLEY: And welcome, Boyang.

BOYANG MENG: Thanks for having me.

CARRIE KELLEY: All right, I'm happy to have you both on the show. Now, as you may know, we like to learn a little bit more about our guests before we jump into our main topic. So today's question is, what do you like to do outside of work at WTW? And maybe we'll start with you, Boyang.

BOYANG MENG: Yeah, sure. I mean, I've recently started trying to learn skateboarding again. That's a fun little thing I've been picking up. And I basically learned from scratch and haven't stepped on one since I was like 15.

CARRIE KELLEY: Nice. And how is that going?

BOYANG MENG: I end up kicking it into my shins a lot.
[LAUGHTER]
It's pretty painful at times, but it's fun.

CARRIE KELLEY: Excellent. Kim, how about you?

KIM STEINER: So the most fun thing I do outside of work is coach my two sons' sports team. So my eight-year-old plays basketball, and my six-year-old plays baseball.

CARRIE KELLEY: Nice. All right. So why don't we jump into talking about TOAMS 5, and maybe the best place to start is with some quick background.

BOYANG MENG: The TOAMS is our industry experience study. We conduct it about every four or five years or so. So we collect data from a wide range of companies. For fifth edition, we have 21 participating companies. So we're covering the exposure years 2015 through 2018. And with the number of large number of companies that we have, we're able to get quite a bit of experience. So we had more than 1.7 million deaths on a count basis, and more than $29 trillion of face amount exposure.

CARRIE KELLEY: And so from the name, this is our fifth time doing the study. So what's new or improved for this edition of the study?

KIM STEINER: Well, this study-- we're, for the first time, studying lapse and surrender experience. We've always collected that data, and we decided this time that would be something that's valuable to the participants is to go ahead and study that data as well and release the findings there.
One other thing that we've continued that I think is worth highlighting is the use of predictive analytics. So we really focused on that in terms for data in TOAMS 3, but we've kind of refined that and have even better results there, I'd say, this time around.

CARRIE KELLEY: All right. So maybe we'll start by talking about some of the findings on the mortality side, and then move on to the lapse piece. But what are some of the more interesting trends that you saw as you were reviewing the mortality experience?

BOYANG MENG: Yeah, so we definitely saw some interesting trends relating to mortality differentials across product. So we do kind of separate and compare both term products, versus whole life UL, EUL, both with or without secondary guarantees. And what we saw this time was that the product type that had the highest mortality ended up being universal life without secondary guarantee.
And that's a little bit different from previous studies. Usually, in the past, whole life has been the product with the worst, the highest mortality. But seeing UL come out at the highest was definitely different. Definitely, a surprise. Kim, have any thoughts on what might be driving that?

KIM STEINER: Well, I think one thing that we were able to do this time, as compared to our prior study, is we were able to put interaction between base amount and product. So I think in our prior study, we had attributed maybe some of the whole life impact in the face amount factor. So this time, I think potentially, we did a better job of separating that out.

BOYANG MENG: And we have also seen some corroborating experiencing amongst industry. There have been a lot of rate actions on UL products in the roughly same time frame of the experience that we're collecting here. So yeah, differences from our previous studies, but not completely unheard of.

CARRIE KELLEY: That makes sense. Anything else?

KIM STEINER: I guess some of the other findings that we had similar to TOAMS 4-- we did study preferred wearoff, which is something that is really a hot topic in the industry. So the introduction of preferred classes happened in the industry about 30-ish years or so ago, which may sound like a lot of years, but in life insurance terms, it's not really that many durations into the life insurance policy. Additionally, the earliest risk class structures only had two classes of preferred and a standard. So we have the most experience on that, and then about 10 years later-ish, they started introducing more preferred risk classes. So we have even more limited durations to study that.
But what we have been able to study, and we have four additional years since our prior-term study-- is we've been able to look at how that preferred discount may wear off. And what we have seen is that it does wear off more strongly by age rather than duration. So we did study that with predictive analytics.
And one interesting thing from the results is that we still do see, even at the highest ages, even attained age 85, where we still have a decent amount of experience, there still is a pretty big differential for the best preferred risk class. So we're still seeing lower mortality for those best risks.

BOYANG MENG: Yeah, and it's definitely something that you might normally expect to wear off, eventually, at some point, right? You might expect all classes to eventually converge. Even with our pretty large industry data set, we do eventually run into credibility issues. The number of death claims we have at individual ages really does taper off after age 95.
So I think in terms of interpreting what we've seen in the model of there still being a discount, there still being a gap, you know, at mortality at age 95, it's not necessarily us saying that we expect that continue as much as we don't have enough data to prove that it continues wearing off. But we certainly would expect it to.

KIM STEINER: So I guess particularly on this preferred wearoff, where we're talking about the changes that you've seen between the two studies, but in general, do you see companies incorporating assumptions for preferred wearoff into kind of their best estimate assumptions? Or is that's still relatively new to the industry?

KIM STEINER: I would say that most of our clients are incorporating some amount of preferred wearoff, because there is so much judgment involved in that assumption. There's a pretty big range around what we'd see. But I think we are now to a point where I'd say that it'd be an exception for someone not to have some element of preferred wearoff in their assumption. Not sure if you disagree, Boyang.

BOYANG MENG: Yeah. Yeah, I think most companies wear off age or duration or both. But yeah, it's tricky, setting the parameters, especially at a company-by-company level, usually not having enough experience to really know when to end it. But usually, some element of wearoff.

KIM STEINER: The industry tables do have different tables for different risk classes, and they do have an element of wearoff in them as well. So if nothing else, a lot of companies will kind of mirror the wearoff that is in those. I will say that we're seeing that preferred differential last longer than it does in the industry table.

CARRIE KELLEY: All right. So are there any other thoughts you want to highlight on mortality before we move on to lapse?

BOYANG MENG: Yeah. So Kim started talking about this a little bit earlier, but we did have another new finding this time, related to face amount in relationship with face amount product. So in building kind of interactive effects between product and face amount, what we observed traditionally is that higher face amount policies generally have lower mortality experience than lower face amounts.
So decreasing slope there. But the slope differs between permanent and term products. The term products have a little bit steeper slopes, especially above 100,000, 250,000. Term policies will have lower mortality than equivalent whole life policy.
And that holds true all the way till around 2 and 1/2 million, where we actually see that slope starting to reverse. And we see term policies show, at the very largest face amounts, higher mortality than whole life, which suggests potentially some degree of antiselection for the very largest policies.

KIM STEINER: I think one other thing I'll add while we're on face amount-- we did have an additional finding in looking at the face amount patterns, that generally, as Boyang said, mortality tends to decrease with face amount. But one other element of antiselection, like you talked about with those highest face amounts with term, is just before common underwriting breakpoints.
So as you're moving from not sending someone out to collect fluids to sending fluids, just before that break point, you'll see mortality spikes up. So it seems like there's some antiselection going on with the agents who are aware of conditions that may cause one of their applicants to not get into the same risk class if they moved up just a bit higher in the face amount and got that additional level of underwriting. So that's one other interesting finding that we had with the study.

BOYANG MENG: Yeah, I think we saw that for the first time with TOAMS 4, and were able to observe the same pattern here on four additional years of data. It's an interesting narrative, right? If you want $250,000 [INAUDIBLE] 45 is practically the same, but might require less in terms of underwriting.

CARRIE KELLEY: All right. So a lot of interesting trends in the mortality experience. So as we said at the start, this was your first time looking at lapse in the TOAMS data. So what were some of the key findings from that analysis?

BOYANG MENG: Yes. So you know, I will preface to say that most of our lapse experience has been classically focused so far, but we'll be starting our predictive analytics focus soon. But we definitely have some interesting findings.

When we studied it, we did generally focus and kind of separate the experience by product and duration. There, obviously, tend to be pretty big differences by product and big differences in how policyholders behave over time as surrender charge periods will expire.

KIM STEINER: I mean, we observed other factors that impacted policyholder behavior. A lot of them tend to vary by product, but as Boyang said, some consistent themes by duration, in terms of higher lapse of surrenders early, and kind of leveling off. Specifically for level-term products, where you can buy different term periods in terms of coverage, so you might get coverage for 10 years, 20 years, 30 years.
All else being equal, we saw a higher lapse experience on the shorter level-term period. And that's both within that level-term period, and then also at the end of the level-term period, where you can switch to an annual coverage with an increasing premium per year.
There's often a shock lapse, and the level of that shock lapse is higher for the shorter-level term periods. We also saw on that shock lap specifically, which is a very interesting area of study for the industry, that the experience is correlated with the size of that premium jump. So the larger the premium jump, the larger the shock labs that we were seeing.

BOYANG MENG: And then, for permanent products, especially for whole life, we don't really do look at all of terminations, both lapse and surrender power. Now, [INAUDIBLE] we did see, unlike other permanent products, pretty flat relationship by duration. So not a huge difference. Early durations might be 3% or so. And even in the ultimate period, [INAUDIBLE] durations 26 plus, only drops down to 2 1/2%.
So those are pretty stable over time, unlike flexible premium products, with UL, VUL, IUL, where we see some more significant differences.

KIM STEINER: I mean, another trend that we saw that was interesting to me and not surprising, given other industry data that we've seen, but kind of reinforces-- is that products with secondary guarantees, which is something that is common on some UL products-- they have lower lapses, which is to be expected, because the policyholders are buying that coverage for the protection, so they're going to keep it enforced to a greater degree than a similar product without that secondary guarantee.
We did see something a little odd in the lapse behavior in that for those products with a secondary guarantee, about 20 years out, we saw a little bit of spike lapse behavior, which we hypothesized was likely driven by products that had term-like premium structures, in that they had a level of premium up until that duration, and then that premium started to increase.
So that was something that was a bit unexpected. So that spiked about 20 years out.

BOYANG MENG: And one that's kind of hard, a little bit difficult for us to study, given some limitations with our data, we couldn't completely partition out or identify all the policies that had the term-like premium structure. A lot of policies were just kind of unknown, and we did see smaller [INAUDIBLE] that will be a blend of whole life type level structure in a term like premium structure. But yeah, definitely. Even with the amount of data that we have, definitely still some challenges with quality and granularity of it.

CARRIE KELLEY: When you say term-like structure, just clarify, you're saying kind of level premiums [INAUDIBLE] policies, and then jumping to increase premiums around that duration, 20?

KIM STEINER: That's right. It's the premium structure. So that it's level for that time period, just like a term product would be, and then it starts to increase each year. One other interesting finding, which kind of corresponds to the mortality, is that there are significant differences by face amount band,

which you might expect. But we did see that as a pretty big driver. And its small face amount policies tend to have higher lapse rates than larger face amount policies.

BOYANG MENG: And the same thing for smoker as well-- higher mortality on smokers. We also saw higher termination on smokers. And then, substandard [INAUDIBLE] as well higher lapse and surrender rates on substandard business than standard issue or preferred.
And then, talking about preferred class, we did see also differentials in termination experience between preferred non-smokers and residual standard non-smokers. Generally, preferred classes did have lower termination rates. But that differential did wear off over time.
So we're kind of initially [INAUDIBLE] might have 30% or 40% lower termination experience. By the end of level period, that gap is more like only 10% lower.

CARRIE KELLEY: Great. Well, definitely a lot of interesting findings, both here on the lapse and on the mortality. So I know you've done a lot of work on TOAMS already. But are there any additional parts of analysis that you're hoping to do with this experience?
BOYANG MENG: Yeah. Like I mentioned, with our lapse and surrender study, we'll be kind of moving on to doing predictive analytics for that. And then, we do have a few other things in the pipeline, including joint life mortality and some more topics such as mortality, seasonality, perhaps a few others.

KIM STEINER: I'll just add the joint mortality, in particular, I think will be a lot of interest in the industry, as there isn't much joint experience available, and most companies don't have a credible amount of it themselves. So I'm really excited about that upcoming analysis.

CARRIE KELLEY: All right. So we've covered a lot of interesting findings from the study. But if you had one takeaway for people as they're trying to digest all of these findings, what would it be?

BOYANG MENG: I think for me, comparing the results that we saw in TOAMS 5 and comparing it to our previous term studies or other industry studies-- one thing that I always kind of think back to is this quote I read once from a famous baseball statistician called Bill James, which is that if you have a statistical model that never matches up with your expectations with the eye test, your model is probably wrong.
But if it never surprises you, it's actually probably useless. So really, ideally, you have a model that, four or five times, matches what you expect, and one out of five, it surprises you, then you might have something valuable there.

KIM STEINER: And I could not say it better than that. So I think that's great Boyang.

CARRIE KELLEY: All right. So where can people find more information about the TOAMS 5 study?

BOYANG MENG: Yep, yeah, we have an article published on our website, wtwco.com, with some additional commentary on findings from TOAMS 5, along with contact information for those interested in finding out more about purchasing or participating in future TOAMS studies.

CARRIE KELLEY: Perfect. All right, thank you, Kim and Boyang, for joining us.

KIM STEINER: Thanks for having us.

BOYANG MENG: Yep, thank you.

CARRIE KELLEY: And thank you for listening to Rethinking Insurance. Have a great day.

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