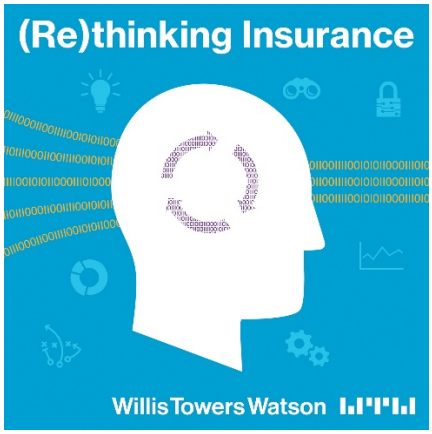

Episode 11: So what is parametric insurance?

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SIMON YOUNG: What we're trying to get to is the raw kind of hazard that's impacting and causing the loss and measuring that and using a measurement of that to trigger the insurance coverage.

SPEAKER 1: You're listening to Rethinking Insurance a podcast series from Willis Towers Watson 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 to rethink insurance.

SINA THIEME: Hello. And welcome to Rethinking Insurance. I'm your host, Sina Thieme, and today, I'm delighted to be joined by my guest Dr. Simon Young. Hi, Simon.

SIMON YOUNG: Hi, Sina. Great to be with you.

SINA THIEME: Simon, you're senior director in Willis Towers Watson climate and resilience hub, focused on projects and programs around the world to support building of resilience to climate risk and natural disasters. And prior to Willis Towers Watson, you were the CEO of Caribbean Risk Managers who are the facility supervisors from the Caribbean Catastrophe Risk Insurance facility, CCRIF.

Being a geologist, a background with a doctorate in physical volcanology, I know you'd happily discuss volcanoes and NatCap protection gaps, disaster risk financing, open source models, et cetera. But in this podcast, I want to discuss with you parametric insurance solutions particularly for the private markets in developed countries and how they work, and what value they can provide.

And before we get into that, I've Googled your name and what comes up first is a Facebook page of a guy from Dorset who was a soldier in the HM Armed Forces. And he became a military car salesman and is now a real estate agent based in Germany. And there's also another Simon Young who was a former Irish radio and TV presenter who started in pirate radio and DJing in the 1970s. And he has a Wikipedia page, which says that he is distinguishable by his mustache, which he grew when he was 15.

So these are the sorts of results you were picturing as a kid when thinking about the future Simon Young?

SIMON YOUNG: Not exactly. No. I did live in Dorset for a while. And actually, one of my first kind of passions was fossil hunting at Lyme Regis. So it might have been found a new fossil, which I know happened to a young girl in the UK very recently. But I think more substantially and a little later, it would have been an astronaut. That was kind of what I would have loved to

have had someone Google my name. So yeah. And I guess volcanoes was as close as I got to being an astronaut.

SINA THIEME: So parametric insurance as opposed to indemnity insurance is increasingly recognized as a very valuable form of risk transfer, particularly for climate and other natural disaster risks. And maybe we can just kick off by briefly defining what parametric insurance is, and which triggers can be used, and how the payouts work, and sort of what the advantages are.

SIMON YOUNG: Sure. And I'd start off by saying as a physical scientist by background, parametric insurance made sense to me when I first started kind of getting into doing insurance related work. It just seems very kind of rational and kind of quantitatively based. And so, and I happened to be kind of in the right place at the right time as it was being rolled out beyond a fairly small niche, which was the kind of weather derivatives market in the US.

And so I feel fortunate to have been there as the growth of it as a potential tool for risk transfer within the broad, what we call the disaster risk financing space has emerged. And what we mean by parametric is that we instead of an insurance policy covering the losses that you've actually incurred and as measured by a loss adjuster or some other kind of measure of actual measurement of the loss, a parametric product pays out on the intensity of the hazard, I think is the best way to frame it.

And so and using an example of a windstorm, a parameter for a parametric insurance might be wind speed. And if you apply that at a household level, then let's say that a parametric insurance product would trigger 100 miles an hour wind speed or 180 knot kilometers per hour, or it may give a certain payout rate at that wind speed, and then a higher payout rate at a higher wind speed.

Bearing in mind that the higher the wind speed, the more damage is going to be done to your house. And so what we're trying to get to is the raw kind of hazard that's impacting and causing the loss and measuring that and using a measurement of that to trigger the insurance coverage. And the benefit, there's a couple of key benefits I would say. One is that we can do that calculation very quickly, either by measuring the intensity of the hazard on the ground using a measuring instrument, or do it from space, or do it in a model.

But we can do that very quickly. And so you can make payouts very, very quickly. The second one is that because it's defined by the hazard, then kind of the pricing of the policy, the risk analytics around the parametric policy are revolved very largely around the hazard and understanding of the frequency and severity of the hazard itself. And that in general is the piece that brokers and the global reinsurance business writ large understands best and has least uncertainty about.

And so you can price much more kind of precisely to the estimated loss on a contract, let's say, if it's a parametric contract because your analytics are much more and have much less uncertainty around them. And we find that to be very advantageous, especially in emerging markets, where there's very little claims data and other kind of data that would be used to price indemnity programs.

Where that claims data is absent, there's very little on which the reinsurers and the insurers can price. And so they put a big uncertainty band on indemnity covers, whereas you can reduce that uncertainty band and therefore the pricing around parametric covers.

SINA THIEME: Right. OK. So speed of payout and accurate pricing are certainly advantages. Now the obvious downsides, I think are, if you're just below the trigger, for example your wind speed, then obviously you're not going to receive any payment. And then two, if the event is above the defined trigger, then your predefined payout may not match your actual loss, which is what basis risk is, right? And it's pretty clear that product design is absolute key to this. And maybe you can talk about some examples and what can be done structurally to address these downsides.

SIMON YOUNG: Yes. Absolutely. I think we need to recognize where parametric insurance is and isn't relevant. It shouldn't be used to replace indemnity insurance, where traditional indemnity insurance is in place and is serving its function. But there are many contexts where we think parametric insurance can be deployed alongside, and to complement, indemnity insurance, and other contexts where it can be deployed in advance of indemnity insurance actually.

And so but you're absolutely right. Product design is a key. I had mentioned earlier that I happen to be in the right place at the right time when parametric insurance was emerging particularly for developing and emerging economies sovereign governments. And we learned that getting the product design right was really critical.

And so in some of the things we've done, this binary trigger, which is often associated with parametric insurance, it'll pay or it won't is we don't really use that now. It was used in the early days. But we don't use that now. There still usually as a trigger threshold above which payments are made, and below which payments aren't made. But quite often, the payments start at $1.00 let's say above the threshold.

And so the actual step is-- the issue around the step at the beginning of the trigger can be significantly mitigated. We also [INAUDIBLE], for example, there's the Caribbean program you mentioned earlier, there's a mechanism to actually do a small, actually a proportion, of premium is rebated for losses or for triggers that happen for a little bit under the official trigger threshold for payout.

So there are ways we can accommodate that kind of sharp trigger. And I think in various structures, we've managed to do that. Basis risk is, I would say a more significant issue, but also an issue where you start thinking about parametric insurance in direct comparison to indemnity insurance or traditional insurance. And in many cases that I've worked, there is no indemnity insurance. So there's no expectation that you will be indemnified for your full loss. And so as long as you are very transparent about what the parametric insurance is and isn't doing, then I think that that mitigates the basis risk issue.

And basis risk is more around expectations, the kind of actuality. And I could talk about a government loss to a cyclone here in the Caribbean is something that's very, very hard to measure. And historically, we don't really know. There's huge differences in loss estimates for governments, for even fairly recent events. And so because a lot of it's less tangible than just building damage, et cetera. So in those cases, making a comparison to what an indemnity program would have paid out is not really useful.

And my view is that if we can get some risk transferred cost effectively and packaged up in a parametric form, and that the payouts can go quickly to help to get recovery underway, then that's useful. And it can be useful even if it's only partially kind of compensating for the actual losses that have been incurred.

So in other circumstances, basis risk can be really critical. And we do need to be paying very close attention to product design to minimize that. But we also need alongside that to kind of manage expectations and to differentiate clearly between what a parametric instrument was trying to do and what an indemnity program would do if that was deployed instead.

SINA THIEME: Right. OK. And where there is indemnity insurance and where indemnity and parametric do complement each other, do you have an example of how that works exactly?

SIMON YOUNG: So I think a good example would be the program in Morocco, which we've been involved in. And so this is a kind of comprehensive NatCap protection program, which spans the existing insurance marketplace, as well as the uninsured population. And it's a government sponsored program. And there is one part of it. So it was captured in law at the beginning of 2019 having been kind of in the works for many years supported by the World Bank amongst others and developed hand in glove with the Moroccan insurance industry, which is very strong.

And so there are two basic pillars to this program. One is it works through the existing insurance mechanisms and kind of expands-- uses the overall program to expand those to give additional cover or to guarantee cover for natural disasters as declared by the government. And then the other piece is a kind of quasi indemnity program for uninsured people, which is supported by a parametric reinsurance program.

And so here what we're doing is not exposing the bulk of the risk taking to the indemnity piece of the program, which is for, as I said, uninsured people. And so there's no claims history at all. They actually aren't holding insurance policies. The adjustment process is documented in law but has not being tested. And so kind of exposing the risk markets, the international risk markets to that piece of the risk, would be effectively very expensive.

But so what we've done is to use parametric risk transfer to transfer the majority of that risk off of the government of Morocco into the international markets. But collectively, the basis risk between how they end up adjusting those claims in inverted commas for those uninsured people who are affected and get them their benefits is on the government. And it's not on those markets who would have priced a very big margin on their estimates of what that indemnification cost would be.

Whereas we were able to place at an incredibly competitive rate the parametric program for earthquake in this case and initially. But we're hoping to expand that into other perils as well.

SINA THIEME: Right. And when you say markets, you mean reinsurers rather than capital markets I think. Do you think capital markets have a larger role to play in the future as capital providers for parametric coverages?

SIMON YOUNG: They do. Yes. And it's kind of interesting because quite often I've seen that parametric ILS slash capital markets risk transfer are kind of put in the same bucket and are kind of joined at the hip and in the minds of some people that we deal, with some clients, some potential clients. And this spans the public and the private sector. So and this was because I think in some of the earlier ILS transactions, quite a few of them were parametric in nature.

And I think it was foreseen that the capital markets would be able to engage more easily on well quantified risk, which parametric inherently is as I described earlier. And so and understanding the nuances of the operations of an insurance company is something that the reinsurers through their relationships, through their longstanding relationships, really felt that that was their kind of market niche. And therefore, the capital markets might not want to spend their time to get to know that part of the business, if you like.

So most reinsurance treaties for property cover for example, would not really be particularly amenable to the quant approach of a typical ILS market. And so I think what we saw is that actually the ILS, because some other things were well aligned, so certainly post 2008 and nine, that the ILS market was able to actually engage across a much broader segment of the overall reinsurance space than had been originally envisaged.

And so what I'm actually seeing is that right now the traditional reinsurance markets are actually more competitive than the capital markets on a lot of the transactions that we're looking at. But that's mainly because the transactions I'm concentrating on are diversifying for the reinsurers, whereas the capital market, their ILS business model doesn't recognize the value of that diversification in the same way.

I think if we start to see parametric programs coming out of peak risk zones, then those will be gobbled up by the ILS markets. And I think that their pricing on those will be much more competitive. And so I think that that's why we're likely to see that the most rapid growth as we see more parametric being deployed in Southeast US for example, or for California quake, or for Japanese quake, or for Euro windstorm as well. So those kind of risk zones, I think if we start to see big volume parametric, those are going to be really ripe for capital market engagement.

SINA THIEME: Yeah. OK. So you touched on geographies. I guess I'd be interested in your

views on which lines of business on the personal commercial side for which kinds of business makes parametric insurance most sense to you. I know parametric insurance was just recently in the news again in the context of claim pay outs to impacted businesses, I think 10 hours after flooding from UK storm Kristoph. So is that area where this is going to go? Or what's your view on this?

SIMON YOUNG: So I think I differentiate here between the public and private sectors. And most of the work that I do is in the public sector where indemnity insurance does have good penetration. But that certainly is missing quite a lot. There's quite a lot of protection that we think that we could do for NAT/PAT for municipalities, for government entities who don't understand their risk particularly well, and beyond their kind of property insurance, don't really have very much coverage.

And so this is kind of business interruption for government operations, provision of services, loss of tourism dollars if you've had a wildfire in Napa Valley for example. Those sorts of-- or flooding, has a general impact on the population. And also very quick money within, as you've just said, hours, hours to a few days, can be really, really useful in actually reducing the impact of the event itself for a government who is faced with the emergency response costs and the early recovery costs.

So there's definitely a substantial area there. On the commercial side, I think it's going to be more relevant for business interruption type risks which I don't think are particularly well captured through indemnity programs. They're quite inefficient I think when they're deployed for BI, particularly kind of on global programs. Contingent BI is a little bit of a construct that you probably wouldn't arrive at if you'd started the conversation with parametric insurance as part of that conversation.

I think parametric insurance can be deployed quite broadly in BI context. And then there's some other kind of more esoteric risks around particularly those related to their being identified through kind of climate risk requirements for transparency on climate risk. And so and some of those are not going to be covered by just kind of raising the limits on your indemnity program even if you thought that that was a good use of funds.

So I do think that the parametric programs for some kind of weather and climate related risks are going to become more important than the commercial sector as these financial institutions first, but across the entirety of the economy sooner rather than later will be required to disclose their risk to their exposure to climate change, which is dying in the UK already, and in Europe, and will be in the US very, very soon.

SPEAKER 1: Right. So if I may insure mostly focused on commercial business and I'm thinking about parametric insurance solutions, what would you say are the three key things to consider?

SIMON YOUNG: I think the first one is to kind of work with your clients to manage their expectations about what parametric insurance can and can't do. I think if you set the expectations on the client side, then other things will follow. And a lot of the potential challenges can be addressed upfront.

And so this isn't about setting parametric insurance as an alternative. It's not about pushing a fancy product onto clients. It's about building their understanding of what their overall risk profile looks like, how their current indemnity program, presuming they have one, is operating, and where the gaps are, and how you might plug those gaps.

So expectation management I think is one. Second one is don't immediately think about off the shelf solutions, even though most of those are kind of adaptable in some ways. The design criteria for a particular client needs to be assessed. So kind of don't think that your reinsurer solution that you've just got off a nice glossy flyer through is the only way to go. So kind of assess the options, assess what the client needs.

And there are emerging solutions across the main perils kind of globally now. So there are always alternatives. And then the third one is I think in the product design, you need to be sure

that it's going to be sustainable and that it's not seen as a kind of a once off deal. And sometimes with parametric insurance, there's a little bit more of a setup cost because you need a calculation agent role, you need to kind of define the data source. So those kind of more technical issues.

So kind of setting up a program up front can be more expensive than a renewal would be just because you have to embed some of those costs. So kind of being aware of what the costs of operating a parametric insurance program would be, and having a view as maybe to set up as an insurer to set up a platform that you can access those instruments more easily and so you're not having to do the setup costs every time.

So yeah. I think those would be three considerations that should be front and center.

SINA THIEME: Great. Thank you so much for your time, Simon. And that's really interesting.

SIMON YOUNG: Oh, well thank you for having me.

SINA THIEME: Thank you for listening to this episode. And if you found this interesting too, then join us on future episodes of Rethinking Insurance.

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