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UNIQUE PERSPECTIVES



Liberty
Specialty Markets

FINANCIAL RISK SOLUTIONS
MODELLING IN A CRISIS

The only prediction we can make with 100% confidence is that our risk scenarios will not prove completely accurate. But in an imperfect world, they can provide a useful indication of what might go wrong, how badly and how quickly. Hugo Cruz explains how scenario modelling can offer stability in uncertain times.

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Modelling is at the heart of our business. It's what enables us to understand the combined impact of multiple exposures on our portfolios and to identify and manage potential aggregations of risk in particular lines or territories over time. Some models we construct for planning purposes, some are mandated by the regulator and some are produced for Lloyd's in line with its market-wide Realistic Disaster Scenarios.

Liberty's Country and Credit Risk Management team construct scenarios for the Financial Risk Solutions (FRS) teams, whose client base is predominantly large banks, multi-national corporations, and public agencies (multilateral institutions, development banks and export credit agencies) around the world.

Obligors are typically corporations, banks and sovereign risks – including finance, health and transport ministries and state-owned companies, all of which are highly exposed to a myriad of variables, including everything from oil price fluctuations through to inflation rate changes or systemic financial instability. While a model can never predict a

specific incident, such as the collapse of a particular non-financial banking institution, it can model what the impact might be of that type of failure across our book of business.

Although we regularly model for large risk events, in March 2020 the declaration of a global pandemic by the World Health Organisation was probably the biggest test to date of the industry's ability to model the impact of a global catastrophe on our underwriting portfolios.

Preparation is all

At the beginning of 2018, our portfolio analysis had highlighted areas of potential threats to our FRS portfolio that were linked to changes in the credit cycle, and we therefore had started to review and tighten our underwriting appetite. In doing so, we were able to improve the stability of our portfolio and in turn offer our clients the reassurance of a partner who will be there for the long term.

By rebalancing our portfolio away from higher premium, lower-rated risks, primarily in emerging markets, towards steadier, better rated, longer tenor exposures in developed economies including Western Europe, the US and China, we avoided a potentially unhealthy risk aggregation and improved stability. Our scenario modelling was a vital tool in helping us prepare for the impact of the pandemic, even though, unlike say a windstorm, we had no predictable timeframe for when it would happen, no

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established loss history and no idea of how long the impact might last.

There is a tendency to assume a scenario model will provide all the answers. But this assumes two things: first, that the model is accurate; and second, that the assumptions on which it is based will hold true over time. Real life, as we know, is more complex – facts change, assumptions alter, and we need to be conscious of what is happening in the markets and translate that into effects we can model. When the questions land, we hope to be able to indicate with a degree of probability, whether all exposures will be impacted or just some, and whether the impact is likely to be equal or weighted towards a particular industry, territory, type or length of exposure.

A key factor is data – its completeness, accuracy and timeliness are critical. Work we started in 2017 in collecting data, and when necessary back-filling it has paid off, by ensuring that we had all the relevant data at individual policy and obligor level – if you can't measure it, you can't control or model it.

What scenarios do we model?

One area in which our model has proved accurate has been the effect of the pandemic on overall economic activity, which we had anticipated would be severely impacted. What the model was less able to anticipate, was the degree to which unprecedented levels of credit, monetary and fiscal support by central banks, governments and multilateral agencies would dramatically reduce the anticipated level of losses and defaults. While there is no doubt that these interventions have bought us time, our scenarios continue to suggest, however, that as support is withdrawn, so the effects in terms of credit losses and unemployment will follow.

As in all scenarios, the impact is never binary (good or bad), and even within one industry and territory there will be winners and losers. Looking at the retail sector, high street shops, supermarkets and online offerings have all been impacted by the pandemic in different ways. The hospitality, leisure and travel sectors have also experienced different outcomes, depending on their business model. If we were to experience another 'left-field' crisis tomorrow, such as a large solar coronal mass ejection that compromised many of the world's satellites and server farms and suspended GPS, web connectivity and data centre capability – most tech-based sectors, many of which were well placed for the pandemic, would suffer disproportionately.

The challenge for the insurance industry is not to model all possible scenarios. What we need to ensure is that our portfolios are balanced, that we can identify any countries and industries which may be challenged in a given timeframe and that we do not hold concentrations of risk that would make us particularly susceptible to any one scenario. This means that while we cannot be specific about any crisis or its timing, we know that whatever comes our way, we are prepared.

The challenge with being prudent, is that it is not always popular. Fundamentally, underwriters and brokers are highly skilled people and don't like to leave value on the table. But watering down the punch bowl just when the party starts to get exciting is essential to smoothing out the volatility that so often comes in tandem with a crisis. We must do it by introducing changes early and gradually so they are more likely to be accepted and impactful, ahead of, rather than during the storm.

What does the future hold?

One scenario is that the world (particularly Europe) aligns more with Japan –

becoming trapped in a pattern of low growth, little inflation and slow-motion defaults. On the plus side this means few credit losses and fewer claims, but at the expense of a vibrant economy in which science and technology have less opportunity to change the game. An alternative scenario concerns the impact of the US and UK's economic stimulus. If they turn the dial too far, overstimulating the economy, the resulting interest rate rises might make the burden of debt servicing too onerous, triggering insolvencies. Both scenarios are possible. Our job as modellers is to assign a scale of probabilities to each so we can understand the likely outcomes and the impact they would have on our portfolios.

There is no doubt our scenarios and modelling processes have been changed by the pandemic. As we move forward, we will be trialing new thematic analysis in which we look at the intersection of big forces including demographics, macroeconomics, climate change and technology development and their impact on industries and economies, and therefore give rise to a different set of business risks and opportunities, over the next 5, 10 and 20 years.

We will continue to deploy robotic process automation technologies and machine learning capabilities to automate and improve the quality of data capture, analyse and report on operating and business performance, and improve customer service. Our aim is to use artificial intelligence for deductive analysis to drive product development, identification of emerging portfolio trends and loss estimations.

Ultimately, whatever tools we deploy, our scenarios will continue to be just that – possible outcomes arising from different sets of assumptions. The only prediction we can make with 100% confidence is that our losses won't be the same as we predict in our base case scenario! ■

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GET IN TOUCH

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