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When the improbable happens - how insurers' stress and scenario tests have been adapted since COVID-19

It has been more than a year and a half since the start of this COVID-19 pandemic and industries across the world are still reeling from its effects. Insurers have played an important role paying out claims for business interruption, retrenchment, medical and death claims.

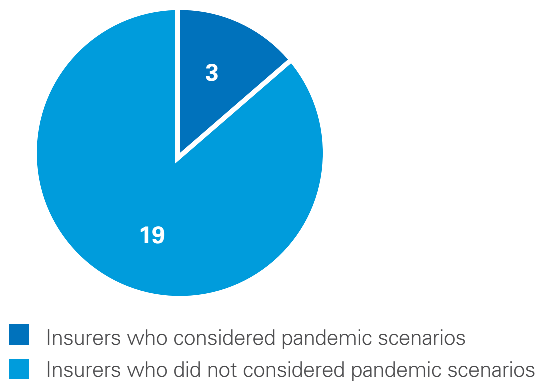
This article builds on that which we published in last year's survey on stress and scenario testing in the insurance industry, based on our survey of a sample of insurers' own risk and solvency assessment (ORSA) reports.

In this article we focus on the enhancements made to insurers' stress and scenario testing to better capture the increased complexity and uncertainty associated with the current pandemic. Our findings are based on a sample of South African insurers' ORSA reports for the 2020 financial year.

Extent of pandemic impact considerations

Pre-pandemic, as shown in the figure below, only three of the insurers in our sample of nineteen had explicit pandemic related stress or scenario tests.

Split of insurers who considered and did not consider pandemic scenarios



Pie chart showing the number of insurers who included specific pandemic scenarios pre-COVID-19, and those that did not.

A stress test is defined as a varying of only one factor at a time while keeping the rest of the factors stable, in order to determine the effect on a portfolio. This is different to a scenario test which is a more holistic consideration, with multiple factors being varied simultaneously.

As expected, post-COVID-19 all insurers had included COVID-19 and its effects in some way in their forecasting exercises. We found that insurers followed two typical approaches. They:

- included stresses or shocks on specific assumptions as described in more detail below, or
- they updated the budget forecast for the expected impact of COVID-19 and applied further considered scenario projections to these updated budget numbers.

More than half of the ORSA reports included a mix of individual stress tests and broader scenario tests.

Key COVID-19-related assumptions stressed

Stress tests performed looked at the impact of varying the following assumptions, one factor at a time:

- increasing and decreasing interest rates;
- declining in equity prices;
- declining new business volumes;
- impact of fraud by increasing the projected claims ratio;
- deteriorating loss ratios;
- increasing mortality and morbidity rates;
- allowing premium leeway/holidays to policyholders;
- increasing the probability of default of brokers;
- downgrading of reinsurer credit ratings;
- increasing cyber losses; and
- increasing lapse rates.

Of the above listed factors, the most common assumptions stressed related to the decline in new business volumes and the impact of fraud.

COVID-19-related scenario tests

Scenario tests are different from stress tests in that more than one factor is considered to vary simultaneously to more closely model real world interactions and outcomes. Insurers considered a mix of qualitative and quantitative scenarios, with most scenarios being qualitative in nature.

Post March 2020, scenario modelling was updated to better capture the multiple impacts of a pandemic, including insurance business and market related factors, typically capturing:

- market crashes similar to those of the 2008 crisis;
- increased fraud;
- increased claim and lapse rates;
- increased unemployment and retrenchment rates; and
- lower rates of renewal associated with deteriorating economic conditions.

Other assumptions included the failure of reinsurance coverage for some lines of business, including those where the pandemic resulted in significant claims.

Over half of the insurers that performed quantitative scenario tests projected that the modelled pandemic related scenario would lead to a breach of the target SCR level, with only one insurer breaching the regulatory requirement of 1 times SCR level i.e. these organisations' risk appetites did not include a capital buffer large enough to be able to absorb the anticipated effects of a pandemic scenario and still retain SCR coverage within the targeted range.

Pandemic scenario adaptation

Hindsight is always a perfect science. We now know that a pandemic scenario has many knock-on effects, but did we always consider this? To answer this we turn our attention to how the industry had predicted a pandemic scenario before the start of COVID-19.

Looking at our previous year's benchmarking exercise based on pre-COVID-19 stresses and scenarios *(included in the 2020 KPMG insurance industry survey)*, we saw that of our sample of nineteen ORSA reports, only three included a pandemic related scenario test within their chosen set of stress and scenario tests.

While those that included pandemic scenarios considered the direct effects of a pandemic on claim and mortality rates and some knock-on effects such as a decrease in economic activity, generally we did not see assumption sets as severe or as wide-spread as the actual experience resulting from the pandemic. The severe knock-on impact of the pandemic (and resulting lockdown) on, for example, the economy and wider mental wellbeing of people (employees and policyholders alike) was often not considered.

In addition the effects were modelled only over a short time horizon (one-year period), with longer term impacts being largely ignored. It is clear that the impact of a pandemic scenario was widely underestimated pre- COVID-19.

Insurers have been agile in adapting their stress and scenario tests. In the most recent ORSA reports, pervasive effects of a pandemic and an economic lockdown were considered. This included not only the effect on market risks, but also social, mental and emotional wellbeing of people. Consideration was given to increased unemployment, higher lapse rates, poverty and potential rioting and unrest, theft and fraud. While some of these outcomes might even recently have seemed improbable, subsequent events have shown that all were well within the realm of possibility.

This seems to highlight a more generic theme - with the fast pace of change in the inter-connected world we live in today we can place less reliance on past data to predict future outcomes.

The past year has shown us the value of insurance to the economy. It has been a shock absorber and allowed many businesses to recover. Likewise, the SARB's new risk-based capital regulations seem to have done well to prepare insurers to withstand the shocks of this current pandemic.

So what does the fast pace of change and the new normal mean for us going forward? How should stress and scenario tests be parameterised to ensure scenario tests are sufficiently severe, while still plausible? What other stress or scenario tests should insurers consider in the new normal, and how should the learnings from the pandemic related stresses be brought into future stress and scenario tests? What other events that insurers are currently modelling are at risk of being inadequately parameterised?

For the greater good of our communities, insurers need to remain vigilant and keep on improving their modelling of extreme events. Management and boards need to keep challenging themselves in this respect. It is time to put a spotlight on the events that we call "1 in 200-year events" with a vision of what the future might look like and how this might differ from our limited understanding of historic events.