MILLIMAN WHITE PAPER

COVID-19 ORSA guide

Understanding risk within the 'new normal'

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COVID-19 has transformed the risk landscape for insurance companies. In this paper, we discuss how insurers can explore their future exposures to the novel coronavirus through their ORSA.

The ORSA and COVID-19

After severe economic contractions in the first half of 2020, many economies will be plunged into a deep recession as the impacts of business closures and reduced demand affect GDP figures. The economic impacts, as well as the epidemiological aspects of the COVID-19 pandemic, will reshape the outlook for the insurance industry over the next three to five years. Insurance companies will continue to be affected in a wide variety of unprecedented ways, and their exposure to risks will have been significantly different to those accounted for in their original 2020 business plans.

Insurance companies are being forced to adapt their overall operating models, incorporating the impacts of the virus to continue to achieve their strategic objectives and goals. These impacts are not only limited to pure insurance risks such as underwriting and claims reserving, or to the market-related impacts on companies' balance sheets, as there are additional new or elevated operational risks to consider, such as a greater cyber threat linked to employees adapting to a new working environment.

The Own Risk and Solvency Assessment (ORSA) process provides the framework for insurance companies to understand, evaluate, and quantify their risk profile. It is inevitable that the ORSA will form a major part of the backdrop to work in 2020 and likely further into the future. Many companies which planned to deliver their ORSAs to the board toward the end of the year will have to perform an early out-of-cycle ORSA. Firms will need to consider how their risk monitoring and reporting should adapt to the new risk profile.

A central component of the ORSA process is forward-looking stress and scenario tests, and these tests will undoubtedly need to make assumptions around the impacts of COVID-19.

COVID-19 within business planning

The baseline for the ORSA stress and scenario testing is the three- to five-year forecast of expected financial performance and solvency. For most insurers, this will require an extensive exercise to recalibrate business plans to adjust for changes in consumer demand, market conditions, claims experience, and many other factors. There are a number of assumptions which are currently unknown, so judgement will need to be made, such as:

- Will effective treatments or vaccines become available? If so, when? Until such a time, how will public health policies such as social distancing affect business plans?
- How long will the pandemic last in particular geographical areas? To what extent will the virus re-emerge over time?
- How long before economic volatility returns to 'normal'?
- How many additional deaths will the virus ultimately cause?
- What will be the impacts on the demand and affordability of insurance products? Which products will experience greater/reduced demand once the initial peak of the virus has subsided?
- What will be the impacts on claims experience?

Companies will be required, even if indirectly, to take a best-estimate view of these questions when outlining their central business forecast. Yet most, if not all, of these areas are still subject to considerable uncertainty. Stress testing allows firms to explore the potential for reality to play out differently from the central assumptions with a focus on alternative conditions that could be particularly adverse for the company and its stakeholders.

In the rest of this paper, we offer a framework of how insurers can go about understanding the uncertainty in their business plans, the key risks to their strategy in order to achieve their goals, and expectations of solvency.

Key variables

The following key assumptions will be integral to central business planning and scenario testing.

TO WHAT EXTENT WILL THE VIRUS CONTINUE TO SPREAD OVER THE COMING MONTHS AND YEARS?

This is likely to be determined by a number of key factors:

- The characteristics of the virus, how it spreads, how it can be identified and tested for, and to what extent it can affect individuals multiple times
- The responses of governments in terms of public health action and advice to the general public, and the extent to which these actions are successful in containing the spread of the virus
- The availability of treatments and preventative measures such as vaccines

HOW WILL GOVERNMENTS REACT?

While the reaction of governments worldwide is highly varied, the response of the UK government has included:

- Encouraging self-isolation periods for those at risk of having been infected with COVID-19
- Introducing travel restrictions, and mandatory isolation periods for those entering the country from abroad
- Introducing ‘Stay Alert,’ ‘Stay at home,’ and social distancing guidance
- Encouraging ‘non-essential’ workers to work from home where possible
- Closing schools and universities
- Introducing furlough schemes

WHAT WILL THE ECONOMIC IMPACTS BE?

- How deep will the recession be? To what extent are countries’ GDPs likely to be reduced by impacts of the virus such as reductions in global trends?
- How will global economies recover from the recession, and how long will this recovery take? This is likely to be affected by the extent to which the virus resurges in the future, and how effectively these resurgences are contained.
- Will there be long-term increases in unemployment as the economy slowly recovers and governments ease their furlough schemes?
- What are the impacts of government stimulus interventions? In March 2020, many central banks, including the Bank of England (BoE) and the Federal Reserve, dropped interest rates in an attempt to stimulate the economy at the outset of the virus outbreak. This, combined with the monetary expansion implied by furlough schemes and increasing use of social and unemployment benefits, may lead to inflationary pressures. In the short term, however, inflation has appeared to decrease in some countries due to dramatic reductions in demand.
- Government policy will also have a significant impact on each country’s recovery from the COVID-19 crisis. For example, the UK government’s approach to the UK’s exit from the European Union will likely have a substantial influence on the UK’s economic recovery.
- How will increased market volatility impact asset valuations?

HOW WILL THE INSURANCE INDUSTRY ADAPT?

- How will insurance products be transformed to meet changing demand?
- How will digital transformation be used to influence product design and to predict changes in customer behaviour and claims handling?
- Will insurance companies’ operating models return to the pre-COVID-19 model or will insurers change their staff and location strategies following learnings from extended periods of decentralised working?
- How will insurers’ relationships with third-party suppliers be changed?
- What impact will there be on the availability of capital and the structure of assets to meet regulatory and economic capital requirements?.

A central COVID-19 scenario

This section outlines some considerations that insurers should look to capture when devising business plans and solvency projections.

The World Economic Forum produced a report in May 2020 titled ‘COVID-19 Risks Outlook: A Preliminary Mapping and Its Implications.’[1] Within this report they outline the risks perceived most likely to crystallise. These include:

- Prolonged recession of the global economy
- Surge in bankruptcies (big firms, and small and medium-sized enterprises) and a wave of industry consolidation
- Failure of industries or sectors in certain countries to properly recover
- High levels of structural unemployment (especially youth)
- Tighter restrictions on the cross-border movement of people and goods

[1] World Economic Forum (May 2020). COVID-19 Risks Outlook: A Preliminary Mapping and its Implications. Available at: http://www3.weforum.org/docs/WEF_COVID_19_Risks_Outlook_Special_Edition_Pages.pdf

Additionally, a June report by the Organisation for Economic Co-operation and Development (OECD)[2] highlighted two potential scenarios regarding the future spread of the virus:

- A single-hit scenario, in which a second wave of the virus, as experienced in March/April 2020, is avoided. For many insurers, this could be considered as a central scenario. Although, if a second wave is avoided, it would be prudent to assume that the virus will still be present in the UK, and social distancing measures would remain for several months, as assumed in the BoE Monetary Policy Report for May 2020.[3] There will still be some fluctuations in the number of infections throughout the year.
- A double-hit scenario, in which there is a second major wave of infections before year-end. A second wave of the virus would require lockdown measures to be reintroduced, and this would halt any economic recovery. This potential scenario was also highlighted by Oxford University.[4] For many insurers, this could be considered as an adverse scenario.

Insurers should factor in the likely impacts of the OECD's single-hit scenario within the business plan projections as well as a number of localised, smaller resurgences of the virus. In addition, as the situation develops over time, companies may look to consider further peaks of equal or greater severity to the first peak seen in the spring of 2020.

We outline below how such a central scenario may affect the business plans of insurers.

Insurers should be considering the future economic recovery and the speed at which the economy will largely return to its pre-crisis level. After lockdown measures were introduced in March 2020, the UK economy contracted by 20.4% in the following month. Based on the report by the OECD,[3] if a second wave does not materialise, the economic growth will be modest throughout 2020 and 2021, with the economy returning to pre-crisis level after a period of two years.

Companies need to consider the change in their market risk profile, as well as the impacts on product demand and claims experience. The wider economic impacts may lead to changes in the solvency and creditworthiness of banks and reinsurers. For example, Fitch Ratings, in March, revised its outlook for the underlying fundamentals of the London insurance sector from stable to negative. Within their central view, companies need to consider the potential impacts of downgrades of key counterparties on their solvency positions. Insurers should also consider their own credit-worthiness and the potential for increased future borrowing costs.

While inflation remains low, it may not be unreasonable to assume that interest rates will remain low, or could be cut further, as governments and central banks move to stimulate economic growth. Such falls in interest rates would lead to increases in future claim liabilities and would challenge insurers that provide annuities or offer guarantees. However, based on the BoE Monetary Policy Report for May 2020,[4] a central scenario could assume that interest rates rise gradually over the next few years.

After the lockdown was introduced, UK consumer price inflation reduced from 1.5% in March 2020 to 0.8% in April, and to 0.5% in May. Insurers may consider under a central scenario a more prolonged period of low inflation as the gradual lifting of the lockdown only leads to gradual economic recovery. However, insurers might also consider the possibility that furlough schemes and other expansionary fiscal policies, accompanied by lower consumer spending, may lead to increased inflation in in the long term.

UNDERWRITING CONSIDERATIONS

The underwriting and claims experience of life insurers is likely to be impacted in a number or ways. Some considerations are identified below:

- Companies need to consider the composition of their policyholder book and how COVID-19 could impact short-term mortality experience. A substantial increase in death rates has been observed directly due to COVID-19; however, data published by the ONS indicates that approximately 89% of registered COVID-19-related deaths involved people aged 65 and over, while 74% of deaths involved people aged 75 and over.[5] The deaths from COVID-19 have not been uniform across the population, and there have been a disproportionate number of cases across ethic and deprived communities. This will need to be considered when assessing future experience.
- It would be prudent to assume that short-term morbidity rates are increased due to COVID-19, as there is limited information about the residual health conditions after recovering from the virus. A government document called 'COVID-19 Hospital Discharge Service Requirement'[6] assumes that 45% of patients can go home with a short or longer-term support care package, 4% of patients will need further rehabilitation, and 1% will require nursing home care, with only 50% needing minimal or no additional support.

[2] OECD Economic Outlook (June 2020). Available at: http://www.oecd.org/economic-outlook/june-2020/#Report

[3] Bank of England (May 2020). Monetary Policy Report and Interim Financial Stability Report Available at: https://www.bankofengland.co.uk/report/2020/monetary-policy-report-financial-stability-report-may-2020.

[4] University of Oxford (April 2020). The economic impact of COVID-19. Available at: https://www.research.ox.ac.uk/Article/2020-04-07-the-economic-impact-of-covid-19

[5] Based on provisional data from the ONS up to 5 June 2020.

[6] National Health Service (March 2020). COVID-19 Hospital Discharge Service Requirements. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/880288/COVID-19_hospital_discharge_service_requirements.pdf

- Companies also need to consider how short-term mortality experience could be impacted from non-COVID-19 related deaths. A study by the ONS[7] has seen a 52% increase in number of excess deaths from the five-year average, with the largest increase due to dementia and Alzheimer's disease. These excess deaths may be explained as non-diagnosed COVID-19, but other potential explanations include delayed care, reduced hospital capacity, and stress-related conditions. For the time period considered, the impact of reduced hospital capacity is unlikely to affect mortality materially. However, for conditions such as cancer, the impact from the lack of testing and treatment is likely to materialise over time.
- Furthermore, there are likely to be adverse impacts on mortality among those unaffected by the virus. People have avoided seeking help and going to the hospital with serious issues, while others have had their treatment for life-limiting diseases delayed. However, the total population mortality is likely to behave differently to the insured population mortality, so it is important to adjust standard mortality rates appropriately. Insurers with adverse claims experience need to consider when claim severities are expected to reduce to pre-COVID-19 levels.

Non-life insurers are also likely to be affected in a number of specific ways, although the impacts will vary significantly from insurer to insurer based on which lines of business they operate in. In general, the considerations are:

- Insurers should be considering the speed at which new business levels will return to pre-crisis levels. Some insurers, writing lines such as travel and motor, are likely to have seen significant decreases in premium income due to lower demands for their products.
- Companies encountering adverse claims experience need to consider when claim frequencies will reduce to pre-COVID level. Many lines, such as business interruption, contingency, travel, general liability, medical malpractice, D&O, political risk, and A&H are likely to see claim numbers well in excess of expected levels. Cyber-related claims may also increase significantly, as a result of changes to the working environment, malware installed on news sites, and potentially more attacks on IT infrastructure. With social distancing continuing to be in place under a prudent scenario, companies need to consider whether claim severities will remain at their current level into 2021.
- Insurers should be considering how inflationary pressure, and pressure on GDP, will impact demand surge.
- In order to model expected future levels of premiums and claims, companies may look to their capital models to understand the impacts in scenarios with a similar return period to the pandemic of around 1 in 25 to 1 in 100.

The experience of health insurers will vary depending on the benefits covered and the policy terms and conditions. Key considerations include:

- Companies need to consider and allow for changes in claims experience. Insurers will likely have seen a reduction in non-COVID-19 claims as services have been delayed; however, these are likely to increase again as lockdown measures are eased, and, in some cases, delays in treatment may lead to more complex cases. In addition, the average cost of treatment may rise significantly due to social distancing measures and additional protective equipment.
- Companies need to allow lapse experience worsening, as policyholders have not been able to access their benefits, although this is more likely among healthier lives, leading to adverse selection.
- Critical illness claims have been delayed by reduced primary care access due to social distancing and from an increased pressure on the healthcare system. Similarly, policyholders may still be unable to see a doctor, which can cause challenges for insurers when underwriting new policies and can lead to a greater risk of anti-selection and fraud.

All insurers will need to consider conduct risk and treating customers fairly, particularly given the uneven effect of COVID-19 by ethnicity and age. The European Insurance and Occupational Pensions Authority (EIOPA) has advised insurance companies to focus on treatment of customers.[8] Based on EIOPA suggestions, alongside consumer pressure and companies wanting to support their customers, some insurers are actively providing premium refunds for lines of business such as motor, where there has been reduced activity while lockdown measures were in place.

Companies will need to consider whether they should revise the cover that is in place so that it better meets the needs of the customer, waive cancellation fees, or rebate customers with partial refunds, following FCA guidance.[9] Additionally, companies will need to treat customers fairly regarding their ability to claim, particularly as they are likely to have been affected by circumstances over which they have little control.

[7] Office for National Statistics (June 2020). Analysis of death registrations not involving coronavirus (COVID-19), England and Wales: 28 December 2019 to 1 May 2020. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/analysisofdeathregistrationsnotinvolvingcoronaviruscovid19englandandwales28december2019to1may2020/technicalannex

[8] European Insurance and Occupational Pensions Authority (April 2020). Call to action for insurers and intermediaries to mitigate the impact of Coronavirus/COVID-19 on consumers. Available at: https://www.eiopa.europa.eu/content/call-action-insurers-and-intermediaries-mitigate-impact-coronaviruscovid-19-consumers_en

[9] Insurance ERM (May 2020). UK conduct regulator issues Covid-19 customer support measures. Available at: https://www.insuranceerm.com/news-comment/uk-conduct-regulator-issues-covid-19-customer-support-measures.html

OPERATIONAL CONSIDERATIONS

Under a central scenario, it is likely that social distancing measures will be required for many months to come. In the scenario highlighted by the BoE,[4] it would not be unreasonable to assume that some form of social distancing is in place until the end of 2020 Q3. Companies may be required to provide personal protective equipment for staff working in offices, and to maintain social distancing, companies will need to find a balance between the number of staff in the office and the number working from home. These issues could lead to significant operational challenges.

Insurers will need to consider when, or if, it may be sensible to return to pre-COVID-19 working conditions. With the prolonged period of working from home there are potential impacts to productivity, although it is generally remarked that productivity may have actually improved since the start of the pandemic.

Many insurers rely on outsourcing providers, which are often based overseas. It is important to consider how resilient these providers will be, given the varying impacts of the pandemic between different countries.

The move to home working increases the risk to cyber-attacks as staff use remote access to a greater extent. This will increase the vulnerability of companies, as most of their work force will now be remote, rather than a small percentage, which could lead a greater risk of ransomware or other similar attacks. It is particularly small to medium-sized organisations who are most vulnerable, although all organisations should allow for a higher frequency of cyber-attacks as part of their central scenario.

The PRA have published results from their COVID-19 stress testing exercise[10] and have noted that the sector has remained robust in this evolving situation, but have said they expect firms to maintain close monitoring of the additional risks presented by COVID-19, update their risk and capital assessments as the situation evolves, and take appropriate management actions where necessary. Insurers will need to ensure that they actively monitor their central best estimate and adjust for any changes where it is appropriate.

COVID-19 stress test scenarios

In addition to reflecting the likely impacts of COVID-19 within central scenarios, insurers should construct a range of plausible adverse scenarios to examine the extent to which they are resilient in the context of the considerable future uncertainty. It is important to acknowledge that the likelihood of occurrence of some of the scenarios could be low, but it is important that companies attempt to think outside the box to ensure that a wide range is identified.

As highlighted above, an adverse scenario for a company could be a second or third wave of the virus of an equal or greater magnitude to the first wave of spring 2020, which would lead to an outbreak of infections and a potential return to lockdown.

We have considered a number of adverse consequences related to this potential scenario and summarised these in alignment with a breakdown of risk classes facing insurers. Companies would be well advised to consider a wide range of possible adverse outcomes, which may be causally linked, within each scenario test. Companies should consider scenario testing in isolation (mono-factor stresses) and in combination (multi-factor stresses). Multi-factor stresses should be prioritised over mono-factor stresses, as despite their increased complexity, adverse developments in the pandemic will lead to a number of correlated outcomes across insurers' businesses. The results of these stress tests should be distilled into the relevant key messages within the ORSA report to maintain focus on the key risks and findings of the analysis.

MARKET-RELATED SCENARIOS

A wide range of market consequences should be considered, such as:

- If a second wave of the virus materialises, there is the possibility that the economic recovery is W-shaped, as described by professors of the London School of Economics in an April blog.[11] A W-shaped recovery would occur if there was a short-lived recovery followed by a second economic downturn.
- A valuable scenario to consider is an L-shaped economic recovery, where the return to pre-pandemic levels of economic activity takes significantly longer than the two years predicted by the OECD in their single-hit scenario. Insurers could consider how such an economic recovery might affect assumptions for new business volumes, lapse rates, and renewal rates.
- Insurers might consider modelling the impact of reduced business volumes and renewals over a longer period of time, say three to five years.
- Insurers might model the impact of short-term claims and reserving trends continuing for a longer period.
- The economic scenarios noted above could increase the possibility of a surge in companies entering insolvency proceedings, with elevated levels of corporate defaults. Further downturns in the economy will not help to alleviate market uncertainties, by both businesses and consumers, dampening demand, which would lead to additional pressures on the GDP. Loss of consumers' disposable income could lead to default on premium payments and

[10] Bank of England, Prudential Regulation Authority (June 2020). Insurance Stress Test 2019 and Covid-19 stress testing: Feedback for general and life insurers. Available at: https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/letter/2020/insurance-stress-test-2019-feedback.pdf

[11] Begg, I. & Qian, J. The London School of Economics and Political Science. How different will this time be? Assessing the prospects for economic recovery from the Covid-19 crisis. Available at: https://blogs.lse.ac.uk/europpblog/2020/04/23/how-different-will-this-time-be-assessing-the-prospects-for-economic-recovery-from-the-covid-19-crisis/

higher claim costs under creditor insurance. Insurers might therefore consider credit defaults from policyholders, reinsurers, and other counterparties within their stress tests.

- Insurers could continue to carry out stress tests based on future inflation. As inflation may reduce further, central banks may respond with future reduced or negative interest rates, impacting insurer's investment returns and valuations of long term liabilities.

Insurers could consider the impact that adverse claims experience could have on their asset and liability management, particularly evaluating liability durations and determining if substantial rebalancing of their asset portfolio is required. The current depressed market prices and ongoing volatility should be reflected in longer-term assumptions.

NON-LIFE INSURANCE STRESS AND SCENARIO TESTS

Non-life insurers could consider further COVID-19 scenarios in conjunction with and in addition to those identified above. Some considerations are identified below:

- While each insurer's exposures will be different, all should invest time to identify realistic adverse scenarios for premium income and claims experience. These should be informed by exposure management and capital modelling tools.
- Non-life insurers that write medical malpractice or liability lines for pharmaceutical companies could consider adverse claims experience relating to possible COVID-19 treatments and vaccines. Insurers may consider the consequences of vaccines being imperfect and causing unwanted side effects, resulting in latent claims.
- Insurers could consider the cost of their reinsurance protection, as the capacity and rating environment of the reinsurance market may be significantly transformed. Furthermore, government-backed industry pools could be introduced to insure systemic risk from certain lines of business, such as commercial non-damage business interruption cover and trade credit insurance. For example, the French government has introduced a €10-billion guarantee scheme to support its domestic credit insurance market.[12] Insurers could build stress tests related to how changes in the reinsurance market might affect their business.
- A sustained economic downturn may lead to higher crime and theft rates, as well as claims fraud, resulting in higher overall claim frequency.

MORTALITY STRESS AND SCENARIO TESTS

Insurers should consider how their mortality experience may be affected by adverse COVID-19 scenarios. For example:

- Insurers could stress their balance sheets assuming further deteriorations in short-term mortality experience. For example, insurers might consider the possibility of no vaccine and further significant waves of infection over the three- to five-year business planning horizon. Insurers should actively monitor their own experience to assess the potential impact of future waves, allowing for the possibility that another wave could be more extreme than the first.
- As part of the scenario process, insurers could explore the possibility that the prevalence of the disease permanently changes the shape and level of national mortality. Insurers might consider the long-term implications of this, for example on pricing assumptions such as mortality rates and mortality improvements factors, and how these might affect annuity rates and sales volumes.
- If there was to be a second wave of the virus, there is a risk of an increased number of claims. Insurers could model a mortality shock to identify the appropriateness of their capital buffer.
- Insurers might consider a scenario in which a vaccine is found and short-term mortality rates remain at best-estimate levels while longer-term mortality rates are increased. Given that the development of a vaccine usually takes years, if the development is accelerated, then future side effects may not have sufficient time to materialise. And if the uptake of the vaccine is widespread, there could be long-term mortality implications for the total population.

MORBIDITY STRESS AND SCENARIO TESTS

Similarly, insurers could tie in COVID-19 scenarios to their morbidity experience. For example:

- Insurers could consider the long-term prevalence of COVID-19 along with an increase in overall morbidity. Insurers could build a scenario factoring in a latent, severe long-term health condition that affects COVID-19 patients and increases morbidity rates many years after their initial recovery.
- As hospital consultations, operations, and treatments have been postponed, medical conditions will be identified and treated at a later stage in their development. This has the potential to cause a severe morbidity burden. Health insurers that offer private medical insurance and critical illness policies might model a scenario with morbidity rates elevated for all ages.

[12] European Commission (April 2020). State Aid: Commission approves €10 billion French guarantee scheme to support domestic credit insurance market in coronavirus outbreak. Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_20_650

- During lockdown, people may have developed poor habits, and the sustained impact of social isolation can impact both mental and physical health. There is increasing evidence for a worsening of mental health, and insurers could model a scenario in which the burden of disease is exacerbated and, for example, income protection experience is worse.

OTHER INSURANCE RISK STRESS AND SCENARIO TESTS

Insurers should consider other scenarios across their business. For example:

- With many of the population feeling the threat of COVID-19, there could currently be an increased life insurance demand. If no second wave emerges, this level of new business could stall due to reduced customer affordability as an increasing amount of the population are being made unemployed. Insurers could consider a scenario in which both new business volumes and lapses are impacted over a prolonged period.
- With the interruption to, and now backlog of, medical treatments, medical expense inflation is likely to be very high as providers seek to recover additional costs and operate at a lower capacity going forward. A scenario that considers this increased inflation could be modelled to identify the impact that COVID-19 has had on affordability, which could impact private medical insurance demand.

OPERATIONAL STRESS AND SCENARIO TESTS

The potential impacts of adverse COVID-19 developments on businesses' operations are not limited to the insurance industry. However, they are no less relevant. Potential operational risk outcomes include:

- Key person dependency risk is an area of potential concern. Senior members of executive leadership teams could become infected with COVID-19, and this temporary or permanent loss of employees in a leadership role will have an impact on business activities. This could also affect staff morale and their productivity levels, and depending on the severity of the infection, may cause a delay to important business decisions. However, as a result of the pandemic, firms may come out with a better understanding of their key person dependency risk, which will provide valuable information when they assess their operational resilience.
- A scenario might be considered wherein, during a return to work, there is an outbreak of the virus within an office building. Given the airborne nature of COVID-19 and the delayed onset of symptoms, there is likely to be widespread transmission before the outbreak has been identified. This will lead to significant reductions in operational capacity as employees are absent on sick leave, and potential reputational damage if it becomes apparent that measures have not been put in place to ensure that employees are appropriately protected.
- Similarly, companies may be increasing their exposure to claims from their employees who may suffer physical injuries such as back pain or repetitive strain injury due to lack of proper office equipment, or claims linked to stress and mental health issues, which may become more difficult to manage when home-working.

Summary of framework

In conclusion, we have discussed a wide range of factors that are relevant to insurers attempting to understand how COVID-19 will impact their risk profile.

When considering COVID-19, insurers should:

- First develop a central narrative around what the next three to five years look like in terms of the virus itself and the knock on impacts—for example, on the economy, society and the environment. This can then be quantitatively assessed in terms of the variables that are included within the ORSA forecast.
- It is important to consider which of these variables are subject to considerable uncertainty, particularly those that are relevant to the insurer's risk profile. For the areas that exhibit the most uncertainty, and those which are the most material, it is useful to consider if the variables can be assessed using scenario analysis or other risk assessment techniques.
- A set of stresses and scenarios should be designed to explore adverse developments, where changes are made to key assumptions and parameters in the areas that exhibit most uncertainty.
- Novel scenarios should be developed that involve aspects or dynamics that the business has not previously encountered. The scenarios need to recognise the interconnected nature of today's business environment, and so it is important to focus on multi-factor scenarios ahead of single-factor stresses, as this will better simulate the real world.

When considering COVID-19, insurers should ensure that they consider a wider set of measures than just the balance sheet impact. It is important that insurers assess the impact on all areas of their business, including not only their market, operational, and underwriting risk profile, but also their strategic objectives and business operations. Insurers also need to consider the impact of emerging risks, such as the development of stress and mental health-related illnesses as a result of working from home, and cyber risks due to greater use of technology.

It is essential to be consistently mindful of the inherent uncertainty present in such analyses, and to therefore see the value in reviewing a wide range of possible outcomes to ensure resilience. As the COVID-19 outbreak develops, it is important that insurers continually consider new possible developments. The ORSA is the ideal vehicle for this analysis, and insurers may wish to consider out-of-cycle ORSAs to ensure that their understanding of the risks is up to speed as soon as possible, and that new outcomes are incorporated.

How we can help

Our deep expertise in risk management and Solvency II derives from our cutting edge research and practical experience of working with clients to assist them with their risk management and modelling needs. Our clients know that they can have confidence in us to provide an excellent service and innovative, effective and dynamic solutions that fully meet their needs. We don't believe that all companies are the same, so our approach enables us to ensure that the solution each client receives is tailored to their precise circumstances and maturity level.

In respect of ORSAs and risk management, we offer assistance with:

- Review of existing ORSA frameworks
- Review of ORSA scenarios, and related modelling
- Gap analysis review
- Development of risk appetite statements and articulating these in terms of impact tolerances
- Developing causal modelling frameworks through the use of Bayesian networks
- Design and build of operational risk models to facilitate understanding and quantification of the risk
- Development of risk management frameworks which improve operational resilience

If you have any questions or comments on this paper, or on any other issues affecting ORSAs or risk management, please contact any of the consultants below or your usual Milliman consultant.

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