# Enterprise Risk Management through Deterministic Scenario Analysis

APRIL | 2025

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# Enterprise Risk Management through Deterministic Scenario Analysis

## Executive Summary

Deterministic scenario analysis, including a disruptive event, and the actions from management, regulators, and other stakeholders, is a powerful tool to test the effectiveness of mitigation strategies and resilience on the key components of the insurance value chain. The primary objective of this research report is to understand the process used by companies when performing deterministic scenario analysis. The secondary objective is to understand the impact of one scenario on the life insurance industry.

This research articulated a plausible moderately adverse scenario, and collected insight from companies:

- A moderately adverse scenario was built: a worldwide IT disruption neutralizing most systems, with relatively quick recovery.
- The impact was considered by all as an earnings event, as opposed to a capital or solvency event. This was categorized as an operational risk.
- Companies integrated not only the direct impacts on their operations, but also the indirect impacts (on sales force motivation, medical providers for health insurance, competition, interest rates, and inflation…) in the analysis.
- Most companies used table-top exercises to estimate the impact of this scenario[1] and its ripple effects, leveraging the experience of its senior managers and not actually completing a quantitative model.
- Outside of this research, companies indicated they use a similar table-top method for scenario analysis, unless the scenario analysis is part of a regulatory requirement with prescribed processes.

We are grateful to those companies that took part in this important opportunity to share knowledge and practice with fellow risk professionals.

[1] Deterministic scenario that develops over time and includes operational or strategic components, not sensitivity analysis quantification for key modeled assumptions

# 1 Introduction and Background

What is the response of insurance companies to a negative or challenging deterministic scenario that plays out over a few months? The Casualty Actuarial Society (CAS) and the Society of Actuaries Research Institute (SOA) sponsored a project to seek this answer by articulating a single well-defined scenario, with narrative and timeline of events, and requested that insurance companies play it out. Insight into the processes companies use to roll out such a hypothetical scenario provides a snapshot of the ERM practices across the industry.

Chronologically, the researchers first built the scenario, which was to fit a set of criteria. Then, the request to respondents was sent in July 2024 with responses due in August 2024. After that, the recruiting process seeking company insights and the support provided to respondents was collected between September 2024 – December 2024. Finally, the analysis of the responses on the scenario, the process utilized, and the insights provided by performing the exercise occurred between January 2025 – March 2025. While the research project designed a template for collecting responses, most respondents were uncomfortable sharing a written response and preferred to engage in conversations. Only two participants used the provided excel spreadsheet to log their responses. Seven provided insights on their risk management process and five provided qualitative insights on the impact of the specific scenario described. Some responses were from large groups with numerous legal entities and numerous lines of business (Life, P&C, LTC business). One consultant provided the reasonable expected impact on a U.S.-based health insurance company.

None of these scenario insights were quantitative due to confidentiality considerations.

The scenario itself is presented in the next section, followed by insights from the companies on the scenario impact and the process used. Later sections describe the process used to build the scenario and engage companies.

# 2 Description of the Scenario

## 2.1 NARRATIVE

- An Information Technology (IT) attack affects cloud services from major providers worldwide. The Society for Worldwide Interbank Financial Telecommunications (SWIFT) Banking system is down, with payment processing being delayed. The impact is widespread in the day-to-day life of individuals and the broader society: ATMs, gas pumps, flights, exports, and imports are not accessible. Some violence is reported, with looting of grocery stores. Military deployment supports local law enforcement (e.g., National Guard in the U.S.) with limited coordination. The health care system has greatly reduced functionality.
- Recovery is slow and inconsistent. Military systems are fully operational three days after the hack, and the SWIFT system is back one week after the event. Local banks and credit cards are functioning after two weeks post shock through patchwork solutions and workarounds.
- Non-financial systems are back online with limited capacity 30 days after the hack and are fully operational within two to three months.
- Insurance industry operations are at a standstill, while IT companies are addressing the issue for the first two weeks, with some functionality recovery between the second and third weeks. Full functionality is achieved around the fifth week with some workarounds.

## 2.2 MACRO-ECONOMIC RESPONSES

*The immediate impact is important*[2]

- The Gross Domestic Product (GDP) would be forecasted to decline by 5% for the U.S.
- The technology-related indexes like NASDAQ would drop by 50%, and the broader equity indexes like S&P500 would be forecasted to drop by 30%.
- The rate of business failure would double the usual rate, and the unemployment rate in the U.S. would rise to 10%.
- Interest rates would decrease temporarily.
- The immediate impact on inflation indexes is unclear as two opposite forces are at play: the economic slowdown is deflationary, but government spending is inflationary.
- The price of energy would decline by 50%.
- The government response would include flexibility in compliance with some regulatory rules.
- Central banks would open a liquidity window on a temporary basis. An asset purchase program would be set up to ensure market liquidity.

*But a partial recovery helps three months in*

- The GDP decline would be revised by 2% upward, resulting in a 3% decline from the pre-shock level.
- The technology-related indexes decline would be revised upward by 20%, reflecting a 30% decline from the pre-shock level.
- The broad equity index declines would be revised upward by 20%, a 10% decline from the pre-shock level.
- The energy price would increase by 10%, a 40% decline from the pre-shock level.

[2] All variations listed are in absolute terms, not relative terms, so are, therefore, additive.

- Central banks would close the liquidity window and stop asset purchases. Central banks would cautiously sell a third of the assets bought as the market rebounded. The remainder of the assets bought would be sold or mature over time.

*And an even further recovery an additional three months later (six months cumulative since event)*

- The GDP decline would be revised by 1% upward, exhibiting a 2% decline from the pre-shock level.
- The technology-related index decline would be revised upward by 10%, a 20% decline from the pre-shock level.
- The broad equity index decline would be revised upward by 5%, a 5% decline from the pre-shock level.
- The energy price would increase by 5%, resulting in a 35% decline from the pre-shock level.

# 3 Impact of the Deterministic Scenario on Respondents

## 3.1 THE MAIN TAKEAWAY: OPERATIONAL RISK EARNINGS EVENT

Most of the respondents qualified this scenario as an operational risk earnings event. This means the event would fall into the category of operational risk in every respondent's risk taxonomy. This also means the impact would be material when compared with the yearly profit of the company; it would not materially impact the company's capital position nor its solvency position[3].

This will have a direct effect with the earning shortfall mainly related to the loss of sales the asset price uncertainty, and the cost of getting the various processes back online. The ripple effect of the disruption of the health care providers will be a secondary cost to the insurance industry, and its effect is much more important than the direct effect.

## 3.2 MORE DETAILED RESULTS

The results are confirmatory in nature:

- Most of the participants considered this scenario to be an operational risk scenario, with limited capacity to perform transactions. Complex products, which use a patchwork of cloud services for various aspects of their policy administration (e.g., one vendor for administration, another vendor for commissions, a third vendor for sales, a vendor for payment processing), are fully back online only when all the links in the chain are back online.
- Because of the cross-industry nature of the scenario, reputational risk was not considered to be a factor. Competitive advantage is given to the company able to get back online the quickest.
- Policyholder behavior was considered limited for most respondents. Cash surrender values of savings products cannot be unlocked while the banking system is not functioning. A minor increase in lapse or surrender could be expected during the subsequent weeks as policyholders may be strapped for cash. However, this effect was considered limited due to the relative rapidity of the recovery.
    - Behavior of the sales force may be more impactful; for example, commission-only agents may decide to leave the profession if the ability to generate new contracts is not back online in a reasonable time.
- For health insurance, the direct impact on the insurance business is minor (see below for the indirect aspect). The processing of premiums and claims will be delayed. Goodwill gestures to extend past due payments should be able to smooth over minor discontinuities.
- The impact on liquidity was disregarded due to the existence of the liquidity window offered to insurers by Central banks. The impact on assets was not discussed at length, as the liquidity window and the understanding of the regulatory community were considered sufficient to absorb the short-term impact. The longer-term impact was considered unclear (uncertain impact on interest rate and inflation) to be quantified and commented on.
- One area with a variety of responses was around the degree of reactivity of companies relative to their size.
    - Some argued that a large organization has both the staff and resources, as well as the appropriate flexibility for redeployment of these resources, so it is more resilient. A larger company may be able to use these advantages to return online quicker than competitors.

[3] The researchers link this level of impact to the level of severity of the scenario itself, and to the profile of the respondents' self-selection – companies more impacted by the scenario may have an incentive not to respond to the solicitation.

    - Some argued that a process will be back online when the last link within the process is back online. This may favor smaller companies with fewer vendors and simpler processes.

Beyond operational risk:

- There is a direct impact on a very limited number of product lines: Business interruption and Cyber insurance, as well as Directors and Officers (D&O). However, these lines were not material in the portfolio of the respondents.
- There is an indirect impact due to the scenario effect on the financial markets. For example, interest sensitive lines are impacted by the actions of Central banks. Some annuity business is impacted by stock market movements, but the impact is very limited due to the rapid partial recovery.
- The impact is more complex on other product lines but is considered a second order impact. For example, a driver monitoring system for auto insurance or water damage detection system for risk mitigation would be negatively impacted.
- Note that company liquidity run-on-the-bank consequences were considered and disregarded due to the availability of the liquidity window offered by Central banks.
- For health insurance, the important aspect is the indirect impact, which would be the crippling of the health care system: elective procedures would be postponed, and emergency procedures would be riskier (e.g., no medical records to verify a patient's allergies). However, the scenario indicates a recovery within a matter of a few weeks. Based on the COVID-19 experience, the industry knows this relatively short window would limit the impact on the health of the insured population. Note that the technology outage mitigation strategies that include transportation of patients out of the impacted zone would not work; a Denver hospital could not fly patients to Chicago because the issue impacts both Denver and Chicago.

# 4 Scenario Analysis Process used by Respondents

## 4.1 PROCESS USED FOR THIS EXERCISE

Most, if not all, respondents shared their analysis without performing complex calculations. They provided thoughtful answers based on their knowledge and similar scenario analysis performed previously.

A few companies had ERM team meetings with the scenario being discussed, with input received from other departments.

## 4.2 PROCESS USED FOR SIMILAR EXERCISE

A few of the large companies indicated that they perform similar scenario analysis. Size and level of maturity clearly impact the resources devoted to ERM in general and scenario analysis in particular. Companies below the ORSA threshold rely on the foresight of their upper management team and their nimble status to navigate troubled waters. Larger companies with numerous subsidiaries have substantial ERM departments and routinely perform scenario analyses.

When performing a scenario analysis (deterministic scenario that develops over time and includes operational or strategic components, not sensitivity analysis quantification for key modeled assumptions), most companies do table-top exercises, unless a different methodology is required per regulation. The level of seniority of the participants depends on the company and the scenario - some exercises take place at the C-suite level, some at the director level and some at the analyst level. For example, one company would have this type of exercise performed amongst senior ERM staff from all entities, brainstorming on a scenario and its consequences.

Internal scenarios are usually linked to a company-specific block(s) of business or processes: mortality shocks, interest rate movements, adverse regulatory ruling (start-up), hack of a company's active directory (preventing log in into the company's systems), or a terrorist event close to the company headquarters.

# 5 Methodology

## 5.1 DESCRIPTION OF THE SCENARIO BUILD

The research team leveraged existing scenarios, including those developed by regulators, think tanks, and other stakeholders, including the European Insurance and Occupational Pensions Authority[4], European Systemic Risk Board[5], Canadian regulator[6], reinsurers[7], Federal Reserve[8], seismic scenarios from government actors[9] and think tanks[10]..

Various narratives were considered for the scenario underlying the event, including:

- The impact of debts and deficits of the Organization for Economic Cooperation and Development (OECD) countries,
- The impact of a medical pandemic,
- The impact of a large economic jurisdiction seceding from their economic or political union; for example, Texas, Quebec, or Hungary departing from the United States, Canada, or the European Union, respectively,
- The impact of a technology event created by a solar flare or computer virus,
- The impact of a large-scale climate-related event, and
- The impact of political tension within or between countries, with possible embargo or trade disruptions on energy, technology, rare earth or other goods and services.

The level of severity was also considered, looking at a range including a favorable scenario, a moderately adverse scenario, a severely adverse scenario (e.g., 80-90th percentile), and a tail scenario, corresponding to the 70$^{th}$, 85$^{th}$ or 99$^{th}$ percentile of a hypothetical distribution of scenario probability.

Decision factors for selecting the scenario were as follows:

- Relatively short time horizon (this excludes debt-driven scenarios which take too long to materialize)
- Relatively novel scenario (ruling out yet another pandemic exercise)
- Non-geographic dependent scenarios and cross-industry scenarios, to avoid singling out a company, a product line, or a specific footprint.
- Decision to focus on the negative severely adverse scenario, which would allow the researchers to investigate 'positive ERM' through resiliency and the first to rebound concept. The severity level of the scenario was chosen to be between around the 90$^{th}$ and 95$^{th}$ percentile of a hypothetical distribution of scenario probabilities. We leveraged a large body of literature to calibrate the severity of the scenario (see links in footnotes), while bringing our own elements to ensure originality.

[4] https://www.eiopa.europa.eu/eiopa-stress-tests-european-insurers-resilience-scenario-escalating-geopolitical-tensions-2024-04-02_en, https://www.eiopa.europa.eu/eiopa-publishes-paper-methodological-principles-insurance-stress-testing-cyber-risks-2023-07-11_en, and https://www.eiopa.europa.eu/browse/financial-stability/occupational-pensions-stress-test/climate-stress-test-occupational-pensions-sector-2022_en
[5] https://www.esrb.europa.eu/mppa/stress/shared/pdf/esrb.stress_test230531~e7eaca7ddf.en.pdf and https://www.esrb.europa.eu/mppa/stress/shared/pdf/esrb.stress_test200131~09dbe748d4.en.pdf
[6] https://www.bankofcanada.ca/2024/11/staff-analytical-note-2024-25/
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[8] https://www.reuters.com/business/finance/fed-announces-changes-bank-stress-tests-boost-transparency-trim-volatility-2024-12-23/
[9] https://www.cusec.org/documents/scenarios/2012_Scenario_ShakeOut_General.pdf, https://www.oregon.gov/oem/Documents/Cascadia_Rising_Exercise_Scenario.pdf
[10] https://www.ngfs.net/sites/default/files/medias/documents/ngfs_guide_scenario_analysis_final.pdf

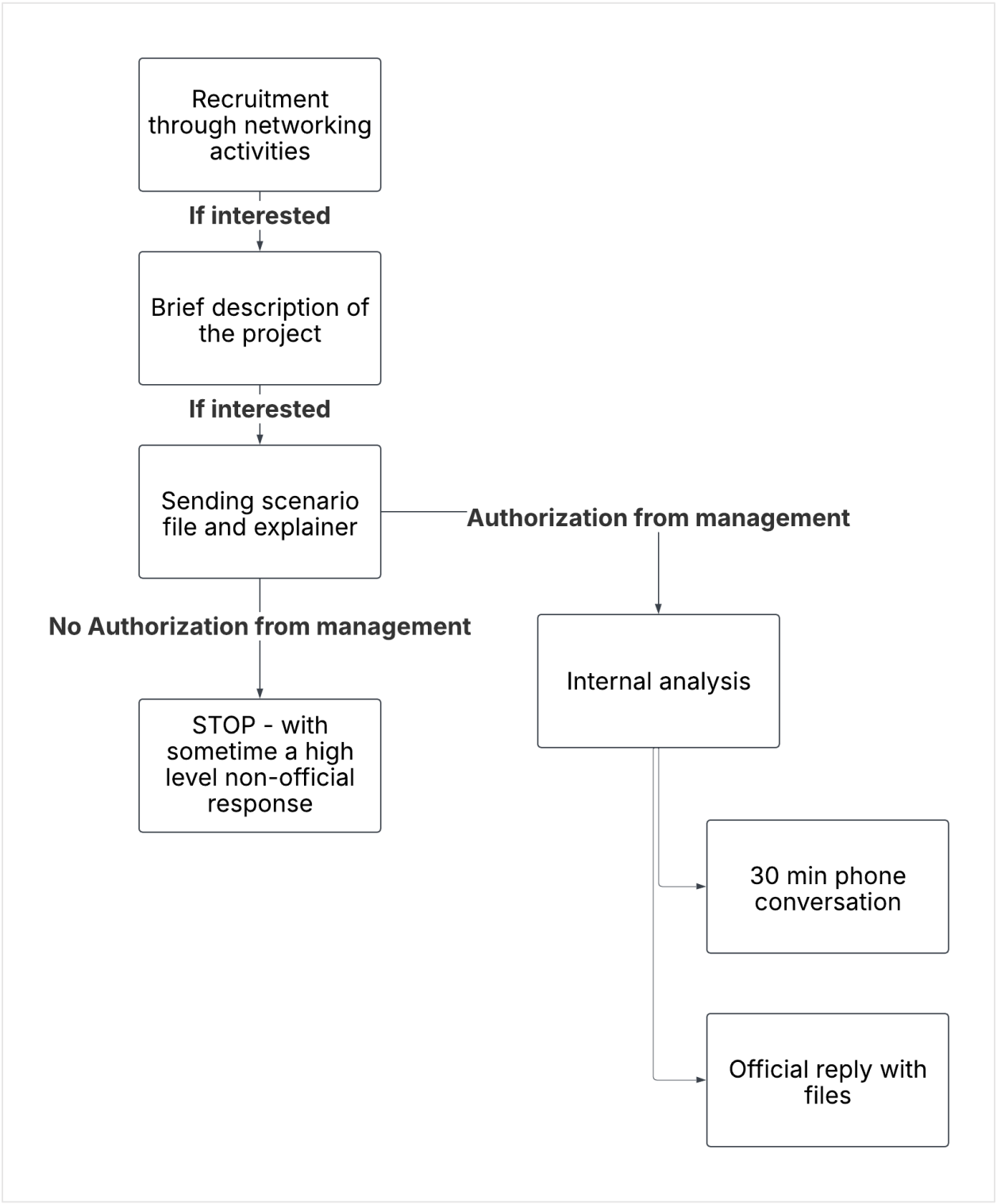
## 5.2 SOLICITATION PROCESS

Companies were reached through various networking channels between September 2024 and December 2024:

- Individual outreach
- International Network of Actuarial Risk Managers[11] (INARM), which is an international special interest group listserv open to members of actuarial organizations around the world. It serves as a vehicle to allow members of all actuarial communities to connect in the risk management area and developments worldwide. This listserv provides updates on INARM activities and allows participants to engage in discussions on topics related to risk management.
- Linked-in posts.
- Leveraging project oversight group members
- Outreach to appropriate sections of actuarial associations (U.S.- and France-based)

[11] https://www.soa.org/news-and-publications/listservs/list-public-listservs/

It follows this general process:



One important aspect at play underpinning the company's willingness to communicate in dual mandate: the confidentiality issues and the difficult balance to strike when communicating on ERM topics: Management of possible external party reactions if a similar scenario were to occur (why the company isn't more prepared as you already studied that case), if a different scenario were to occur (why the company prepared for a different scenario and not the one that occurred), and if no such scenario were to occur (why the company wasted valuable resources).

Companies with very different backgrounds responded to the questions and shared their insights. Company types included monoline and multiline insurance companies, large and small, headquartered in North America and in Europe, policy administrator companies, using Euro, U.S. Dollar, Canadian Dollar, and Bitcoin, established players and recent start-ups.

Some responses covered more than two dozen legal entities and numerous employees, while others covered companies with fewer than ten total employees.

### 5.3 REQUEST PLACED ON COMPANIES

An email describing the request was shared, along with two spreadsheets. One shared an example with a dummy scenario (heat wave scenario - see Appendix A) and a dummy company responding to the scenario and questionnaire, and the second one contained the scenario with which input was requested.

The spreadsheet was divided into four tabs:

0. Instructions
1. Scenario Description (described above),
2. Scenario Response (described below), and
3. Process and Findings (described below).

The structure of the scenario response showed time steps as individual rows and various aspects of the responses as columns. The choice was made to have the timeline separated in three zones (immediate steps measured in hours and days, short-term steps measured in weeks and months, and medium steps measured in 1-5 years), but allowing the specific time steps to be articulated by the respondent (i.e., each row label was up to the company). The following aspects were suggested for consideration:

- Company response, management actions
- Risk mitigation mechanisms (e.g., hedging, reinsurance, inter-company support received or provided)
- Company liquidity
- Business operation
- Liquidity of the marketplace (e.g., can asset be easily sold for a reasonable price)
- Asset default, spread
- Sales of insurance products
- Claims
- P&L
- Policyholder reaction
- Competitor reaction
- Additional comments

The additional questionnaire on the ERM process asked the following:

- Please describe your company in a few words, in terms of lines of business, size (assets or premiums), ownership structure and/or any elements that would help contextualize the answer.
- Please comment on the setting of the exercise (severity level of the scenario, amount of guidance, difficulties uncovered to run the experience).
- Please comment on the process you used to play out the scenario.
- Please comment on the findings (risk mitigation technique proven effective or not, decision to modify current practice).
- Do you already perform something similar? If yes, please share insights.
- Any other comments

# 6 Conclusion and Future Research

Scenario analysis is a key tool in the ERM process. With their realistic story attached, it anchors the simulation into reality. With the anticipated actions of global stakeholders (financial markets, regulatory authorities, and others), it creates a situation where management actions, but also existing mitigation action triggers and effects, can be tested on a variety of components of the insurance operations. Companies are using table-top exercises for this task to capture the interrelationship between actions of various stakeholders. This is complimentary to the quantified sensitivity testing (economic scenarios, sales volume, claim, lapse, expenses…), which shows hard numbers but doesn't capture operational components nor the back-and-forth of management action and stakeholders' responses.

The respondents also indicated that a scenario tailored to one's specific business is more insightful than a large-scale scenario. This echoes the spirit of the Own Risk and Solvency Assessment (ORSA) regulation, where emphasis on an insurer's Own Risk, the risk to the specific company line of business and operation, is the most relevant to analyze.

Further research could be envisaged, asking companies to articulate their own scenarios before responding. This would require companies to be comfortable with the confidentiality aspect of the research. Other possible research could be to leverage other ERM research efforts from the CAS and SOA; one way could be to integrate new questions into the emerging risk survey[12].



[12] https://www.soa.org/resources/research-reports/2025/18th-survey-emerging-risks/

# 7 Acknowledgments

The researchers' deepest gratitude goes to those without whose efforts this project could not have come to fruition: the Project Oversight Group for their diligent work overseeing, reviewing, and editing this report for accuracy and relevance. Any errors remain the responsibility of the author.

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# 8 Appendix A

To articulate our requests to companies more clearly, we included a second scenario, along with a fictional but realistic response from an insurance company.

## 8.1 ILLUSTRATIVE SCENARIO DESCRIPTION

The narrative of the illustrative scenario was as follows.

- Heat wave impacts major areas of the northern hemisphere for 20 days in early June, longer than a 'typical' heat wave. Stress on the electricity grid causes price hikes and shortages. Working conditions outside, but also in non-AC warehouses and factories, lead to productivity losses.
- Medical facilities are under stress, as are other critical operations (food and safety). School closings impact the availability of workers. However, there are no major breakdowns in the health care provider system, grocery supply chains or other necessities. A limited spike in violent crime without widespread breakdown of law and order occurs in developed countries.
- This scenario is NOT combined with wildfire or tornado or spread of tropical diseases. No large-scale climate migration or large-scale policy change (e.g., no stringent carbon tax) occurs.

Macro-economic responses

The immediate impact is important.

- The Gross Domestic Product (GDP) for the U.S. would be forecasted to decline by 1% after a week.
- The technology-related indexes like NASDAQ would drop by 50%, and the broader equity indexes like S&P500 would be forecasted to drop by 30%.
- The unemployment rate in the U.S. is unaffected after the 20 days as some areas of the economy struggle, and some need more workers.
- The Central banks are in discussion to lower the interest rates by 50 bps.
- The energy cost increases by 20% due to energy demands for cooling. Prices for food increase by 15% with a one-month lag.
- Mortality increases substantially for the fragile population, around 10%-15%, during this period for people 75 and older or at-risk populations (lower socio-economic classes, rural areas with no colling station…), with a higher impact in areas not well equipped for warm weather (e.g., in the U.S., Northeast and Midwest compared with the South).
- Morbidity increases substantially for the fragile population, around 10%, for these days for people 75 and older or at-risk populations, with a higher impact in areas not well equipped for warm weather.
- P&C – Crop yields are reduced by 30%, cracks in roofs or building foundations lead to a 10% increase in claim frequency for homeowner insurance, cars overheating lead to an increase of 10% for mechanical failure, the general mechanical breakdown increases by 15% (factory machinery…). These factors lead to an increase in business interruption by 15%.
- There is no emergency liquidity window provided by Central banks.

After three months

- The unemployment rate rises to 8% due to economic impact and forecasted adaptation costs.
- Central banks lower the interest rate by a total of 150 bps, noting that inflation is reverting to initial conditions, but the economy remains impaired.

- The technology-related index decline would be revised upward by 5%, a 10% decline from the pre-shock level.
- Oil prices would decrease by 40%, a 10% increase from the pre-shock level, and food prices would decline by 12% for a total increase of 3% from the pre-stressed level.

### 8.2 ILLUSTRATIVE SCENARIO RESPONSE

| Timeline | Day 7 |
|---|---|
| Company response, management actions | After day 7, the sales force is ordered to stop taking new applications |
| Verifying the solidity of reinsurance contracts. Pausing large non-essential projects | |
| Company liquidity | Cash is king, putting a stop to all non-essential payments. Luckily, some of our bonds are close to maturity giving us a cushion. Renegotiating the payment structure of one large IT contract also helps. Drawing online credit should help cover the needed liquidity. |
| Business operations | Stop writing new business and sales force temporarily laid off. Boost communication department and claims processing (reassignment of some sales employees) and boost support to funeral homes (tips for process improvement). |
| Liquidity of the marketplace (e.g., sellable assets) | Liquidity lowers but still exists |
| Asset default, spread | Spread of BB bonds widen 150 bps. Municipal bond market spread x3 when not backed by earmarked revenue (most financially impacted) |
| Sale of insurance products | -100% during the heat wave |
| Claims | +50% |
| P&L | Earning event, not solvency event |

| Timeline | Day 20 |
|---|---|
| Sales of insurance product | Timid restart around 20% of previous level after the heat wave. Adjustment of the marketing target. Waiting for re-pricing. |

| Timeline | 2-3 months, more if regulatory delays |
|---|---|
| Comment | Slow return to initial condition on the stock/bond in general. Companies slowly recover. Small reinvestments have been made, and low/no sale have impacted our liquidity position.<br><br>Our partnership with funeral homes allows us to 'guarantee a spot,' which significantly boosts sales when they resume.<br><br>Building flexibility in workforce to allow shifting agent into claims. |
| Sale of insurance products | Rolling out more expensive products with fewer rich benefits when legally and operationally possible.<br><br>Shifting to lower price point (less burial, more cremation)<br><br>Stronger ties with main partners (creating escrow account, process improvement to enhance capacity) |

| Timeline | 9 months |
|---|---|
| Comment | Market share expansion due to the exit of a few competitors. Expanding desire for vertical integration, with the acquisition of funeral home companies.<br><br>This final expense insurance product should remain available, but at a higher price for fewer rich benefits. Contribution to guaranteed fund due to issues on other lines is a factor for price increase.<br><br>Climate change regulation with mandatory stress tests should emerge, with emphasis on reinsurance availability |

### 8.3 COMPANY DESCRIPTION, PROCESS AND FINDINGS

| | |
|---|---|
| Please describe your company in a few words, in terms of line of business, size (asset or premium), ownership structure and/or any elements that should help contextualize the answer. | Funeral expense insurance product, sizable market share in this small space, but we still consider ourselves a small company. We are a fraternal, operating in about 35 U.S. States and 2 Canadian provinces with our Canadian subsidiary. This response is about the U.S. companies and does not include Canada. |
| Please comment on the setting of the exercise (severity level of the scenario, amount of guidance, difficulties uncovered to run the experience…) | The ERM team prepared the scenario by adding a few variables that are relevant to our market (mortality of 70-75, 76-80, 81-85, 86-90, and 91+ years old in rural vs. urban center, male vs. female, but also 5 o'clock news data) in a manner consistent with the described scenario. |

| | |
|---|---|
| Please comment on the process you used to play the scenario | The ERM team played the scenario during our C-suite retreat during a 4-hour session. Every 15 minutes, they dripped the 5 o'clock news data, day-by-day for the first 30 days, then week-by-week. With rule of thumb, they also shared internal metrics. The C-suite had 15 minutes to digest the information and discuss management action. |
| Please comment on the findings (risk mitigation technique proven effective or not, decision to modify current practice) | The scenario didn't spell out the precise impact on our market population. We realize that health care capacity was a crucial assumption, and adding some local health care capacity outages would have been very costly (because our population is not favored during triage).<br><br>We didn't draw on our reinsurance, but we definitely wonder about the impact on the reinsurance market. |
| Do you already perform something similar? If yes, please share insights | Yes, ORSA scenario. We do a single scenario on a company wide basis with robust quantitative impact analysis, as well as four other scenarios as table-top in the ERM department. |
| Any other comments | We could use an external party to develop a scenario tailored to us for the next C-suite retreat |

## About the Casualty Actuarial Society

The Casualty Actuarial Society (CAS) is a leading international organization for credentialing and professional education. Founded in 1914, the CAS is the world's only actuarial organization focused exclusively on property and casualty risks and serves over 9,100 members worldwide. CAS members are experts in property and casualty insurance, reinsurance, finance, risk management and enterprise risk management. Professionals educated by the CAS empower business and government to make well-informed strategic, financial, and operational decisions.

The purposes of the Casualty Actuarial Society are:

- To advance the body of knowledge of actuarial science applied to general insurance, including property, casualty, and similar risk exposures
- To expand the application of actuarial science to enterprise risks and systemic risks
- To establish and maintain standards of qualification for membership
- To promote and maintain high standards of conduct and competence
- To increase the awareness of actuarial science
- To contribute to the well-being of society as a whole

In principle and in practice, the CAS values and seeks diverse participation within the property/casualty actuarial profession. In support of those values, the CAS encourages an inclusive community where differences are celebrated, and all have the opportunity to participate to their fullest potential in its success. The CAS commits time and resources to accomplish this objective.

Actuaries are required to adhere to the high standards of conduct, practice, and qualifications of the actuarial profession, thereby supporting the actuarial profession in fulfilling its responsibility to the public.

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## About the Society of Actuaries Research Institute

Serving as the research arm of the Society of Actuaries (SOA), the SOA Research Institute provides objective, data-driven research, bringing together tried and true practices and future-focused approaches to address societal challenges and business needs. The institute provides trusted knowledge, extensive experience and new technologies to help effectively identify, predict and manage risks.

Representing the thousands of actuaries who help conduct critical research, the SOA Research Institute provides clarity and solutions on risks and societal challenges. The institute connects actuaries, academics, employers, the insurance industry, regulators, research partners, foundations and research institutions, sponsors, and non-governmental organizations, building an effective network which provides support, knowledge and expertise regarding the management of risk to benefit the industry and the public.

Managed by experienced actuaries and research experts from a broad range of industries, the SOA Research Institute creates, funds, develops and distributes research to elevate actuaries as leaders in measuring and managing risk. These efforts include studies, essay collections, webcasts, research papers, survey reports, and original research on topics impacting society.

Harnessing its peer-reviewed research, leading-edge technologies, new data tools and innovative practices, the institute seeks to understand the underlying causes of risk and the possible outcomes. It develops objective research spanning a variety of topics with its strategic research programs: aging and retirement; actuarial innovation and technology; mortality and longevity; diversity, equity and inclusion; healthcare cost trends; and catastrophe and climate risk. The Institute has a large volume of topical research available, including an expanding collection of international and market-specific research, experience studies, models and timely research.

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