

October 22, 2021  
Sompo Holdings, Inc.  
Sompo Japan Insurance Inc.  
Sompo Risk Management Inc.  
Stanford Urban Resilience Initiative

## **Start of Joint Research on Financial Impact Assessment Model Reflecting Changes in the Economic Environment in Times of Disaster with Stanford Urban Resilience Initiative (SURI)**

**- Seeking to Improve the Financial Resilience of Client Companies -**

Three Sompo Group companies, specifically Sompo Holdings, Inc. (Group CEO & President: Kengo Sakurada), Sompo Japan Insurance Inc. (President: Keiji Nishizawa) and Sompo Risk Management Inc. (President: Junichi Sakurai), have agreed with Stanford Urban Resilience Initiative (SURI)<sup>※1</sup> (Director: Jack Baker) to conduct joint research to establish a Financial Impact Assessment Model Reflecting Changes in the Economic Environment in Times of Disaster.

※1: SURI is a program that explores urban resilience (the recovery process for social and economic activity following a disaster). It is part of the Department of Civil and Environmental Engineering of Stanford University.

### **1. Background and Goals**

The financial condition of companies, such as their net sales and asset holdings, can be significantly affected when there is a disaster. These impacts include the costs of restoring the companies' damaged buildings and production facilities, and lost profits resulting from contractions or suspensions of business activity (production and services) as companies take steps to avoid damage to their production facilities and other assets and to ensure the safety of employees. In addition, even if a company's business sites suffer no losses and the environment remains safe for employees to work, there have been cases where the financial condition of companies have been significantly impacted by shifts in the supply-and-demand environment and disaster-related impacts experienced by suppliers and customers following events such as natural disasters and pandemics. The increasing complexity of supply chains and the march of globalization has been partly responsible for this trend.

The Sompo Group has so far designed and marketed risk assessment models and insurance products that mainly cover risks associated with the occurrence of disasters, such as restoration costs for buildings, production facilities and other assets of client companies, and lost profits resulting from business contractions or suspensions implemented by client companies until they can restore business sites and ensure employee safety.

However, as described above, the financial condition of companies is also exposed to the impact of changes in the economic environment and shifts in business activity in the supply chain before and after a disaster. Therefore, the establishment of a risk assessment model that encompasses those impacts will allow for a more accurate understanding of the financial impacts on companies when disasters occur and enable the design of insurance products that better reflect the actual losses. Moreover, it is believed that such a model would be able to achieve other priorities such as supplying information about the financial impacts of disasters that could occur in the future.

Based on these considerations, the three Sampo Group companies have agreed to establish, through joint research with SURI, a financial impact model for times of disaster that reflects factors such as changes in the economic environment and shifts in business activities in the supply chain before and after disasters.

## 2. Overview

Through the conclusion of a joint research agreement, the three Sampo Group companies and SURI will implement a project to estimate the impact of disasters on corporate financial condition by sector and region, with a focus on earthquake disasters, which are a crucial type of disaster to address in Japan. The project will apply the Adaptive Regional Input-Output Model (hereinafter, the “ARIO Model” ※<sup>2</sup>) used by SURI.

In this joint research, the ARIO Model will be applied to past earthquake disasters in Japan, and changes in corporate financial condition will be determined for each sector. The results obtained will then be compared with actual movements in corporate financial condition obtained from macroeconomic statistics issued by public institutions. By doing so, the joint research will study how accurately the ARIO Model can predict corporate financial condition after earthquake disasters in Japan. Based on this study, the joint research will incorporate the ARIO Model into the Assessment Model for Earthquake Risk in Japan Based on Probability Theory, which is being developed internally by the Sampo Group, and establish the Financial Impact Assessment Model Reflecting Changes in the Economic Environment in Times of Disaster.

### ※<sup>2</sup> : ARIO Model

The ARIO Model predicts the time-series trend in corporate financial condition (such as the amount of value added) after disasters for each sector using an Input-Output Table, which contains macroeconomic data that characterizes the trading relationships among sectors. This model was developed to analyze changes in corporate financial condition associated with hurricane disasters. In the past few years, it has been used to analyze changes in corporate financial condition by sector and country in connection with the COVID-19 crisis.

## 3. Business Development from the Joint Research

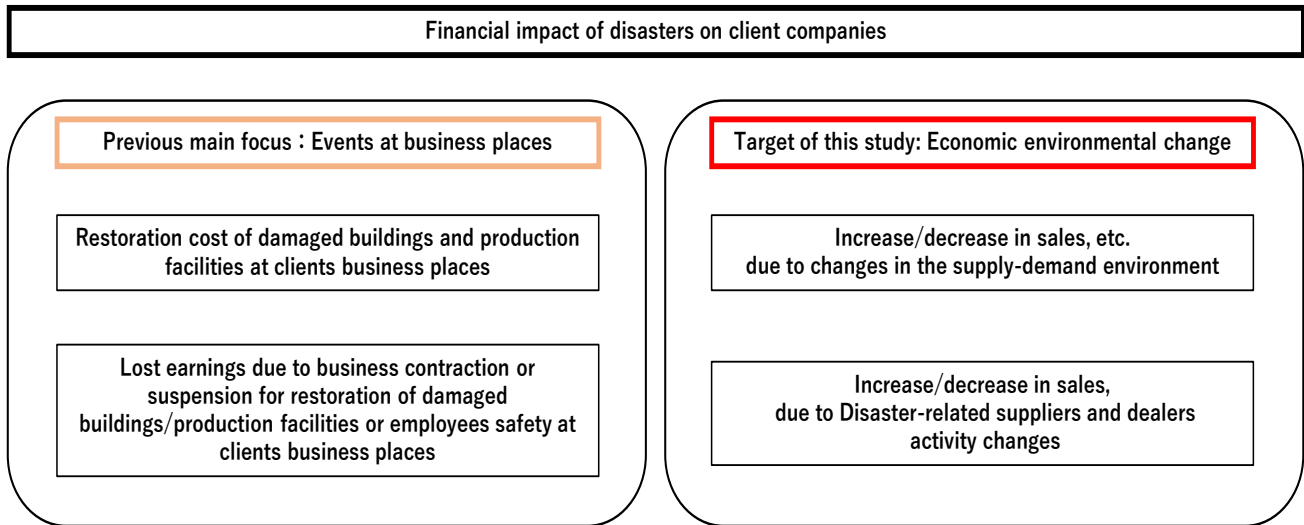
The joint research will enable a comprehensive assessment of the impact of disasters on corporate financial condition. This assessment will be based on not only the assessment of risks from losses at customers’ business sites and ensuring the safety of employees, which has so far been the Sampo Group’ s principal objective, but also changes in the economic environment (supply-demand environment) and shifts in business activity in the supply chain.

Based on this comprehensive risk assessment, the Sampo Group will seek to develop insurance products to help companies improve their financial resilience on the finance front. Concurrently, the Sampo Group will develop this comprehensive risk assessment into a service that helps to improve its customers’ resilience.

The Sampo Group is working to achieve SOMPO’ s Purpose, which is expressed as follows:

“With ‘A Theme Park for Security, Health and Wellbeing,’ create a society in which every person can live a healthy, prosperous and happy life in one’ s own way.” To fulfill this purpose, the Sampo Group will strive to help client companies improve their financial resilience, as it seeks to improve the disaster resilience of society as a whole.

**【Conceptual Diagram of the Impacts on Corporate Financial Condition in Times of Disaster】**



**【Reference: About SURI】**

Name : Stanford Urban Resilience Initiative

Established: 2015

Representative : Jack Baker, Director

Website : <http://urbanresilience.stanford.edu/>

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