

A Methodology for Estimation of Business Interruption Loss Caused by Flood Disaster : A Case Study of Tokai
Heavy Rain

○Lijiao YANG, Yoshio KAJITANI, Hirokazu TATANO

Natural hazard, especially flood, earthquake, hurricanes or typhoon, cause disasters when they hit settlements and industrial gathering area. When disaster occurs, the direct loss is counted by damaged buildings and deaths or injuries. Then after a while, the destroying effects of disaster appear on indirect economic losses of the region. Direct losses including damages in buildings and lifelines can seriously cause non-structural or indirect losses as interruption of business activities and services^[1]. Therefore, disasters affect on economic system in multiple ways are complicated, and the method of calculation of loss is diverse, also the result is non-unique. Numerous economic losses have been estimated and did their empirical validation in case study field from different purposes of study in multiple disciplines. This research just focus on estimation the business interruption loss which belongs to indirect loss.

The aim of this paper is to propose a new methodology to estimate the interruption loss of business based on real questionnaire data by using the method of statistics. This new methodology mainly consists of 3 parts. 1) To estimate the probability of decreased percentage of sales ratio given inundation value using the method of functional fragility curves. 2) to estimate the probability of depression and recovery

by considering the loss value of sales ratio as influence factor using the regression analysis of survival analysis. 3) to calculate the business interruption loss based on loss rate curve and mesh data.