

## **An evaluation of the indirect economic loss from a hypothetical catastrophe based on input-output analysis**

Topic: Input-Output analysis of disasters 2

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In 2008, an unexpected Ms8.0 earthquake jolted Wenchuan County in Sichuan Province, China. This paper assumes that a hypothetical Ms8.0 earthquake also has occurred in Shanghai, which is a highly developed area in China, and studies the indirect economic loss (IEL) and their determinants in order to show the relationship between wealth and disasters. Specifically, IEL is divided into two categories based on the different causes: indirect economic loss I caused by companies' own property damage (IEL I) and indirect economic loss II caused by interindustrial linkages (IEL II). Then, an input-output model is used to assess the two types of IEL. Finally, the causes of the differences in the two different levels of wealth are analyzed. The research shows that (1) for every Chinese Yuan (CNY) 100 of direct loss, Shanghai suffers CNY 12 more in IEL than Sichuan; (2) as compared with Sichuan, Shanghai's magnifying power of IEL II is 4 times, while that of IEL I is 1.4 times; (3) the determinants of the abovementioned differences include the industrial structure, interindustrial linkage effects and trade among other factors. Hence, both physical and intangible structures should be taken into account when building an effective disaster relief system.