

## **Intra- and Inter-regional Economic Effects of the Population Flow after the Great East Japan Earthquake**

Topic: 811B Disaster Analysis

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The Great East Japan Earthquake occurred in the Tohoku and Kanto regions in March 2011 and it has brought about the serious economic and social damage in those regions directly (Reconstruction Agency of Japan, 2014). In particular, three prefectures of Miyagi, Fukushima and Iwate have still suffered from that not only many residents in those prefectures evacuated to another prefecture but many producers in agriculture and manufacturing struggle to employ workers. The former has contributed to the decrease in final demand in the region, whereas the latter has contributed to the decline in production through supply constraint due to the lack of sufficient labor inputs.

With this background, Miyazato (2014) extended the disaster input-output model developed by Steenge and Bockarjova (2007) into a multi-regional framework with a focus on the 47 Japanese prefectures and estimated the economic damage through the labor supply constraints in the above three prefectures. In particular, Fukushima has been significantly affected by the earthquake and its economic damage amounts to 296 billion yen which is 5% of the gross prefectural product.

However, the multi-regional input-output frameworks do not model a relationship between population flows over regions and regional economies well. This study develops a disaster multi-regional input-output framework including the population dynamics. We applied the proposed disaster framework to the multi-regional input-output (MRIO) table covering 80 industry sectors and 47 Japanese prefectures in 2005 (Hasegawa et al., 2015). The MRIO data used in this study is accessible from the website:

<http://www.journalofeconomicstructures.com/content/4/1/5/additional>

and the population statistics of provided by the 47 prefectural governments is used. The results focused on the study period during March 2011 to March 2015 highlight the intra- and inter-regional economic impacts of evacuating from three disaster regions, Fukushima, Iwate and Miyagi to the other regions and suggests a regional policy of how the evacuated people could return to the disaster regions again.