

## **Worldwide economic effects of changes in international trade due to natural disasters: the case of Japan earthquake and tsunami**

Topic: Modelling disasters

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The economy of Japan is the third largest in the world after the United States and China. Japan also plays an important role in international trade: it is the fourth exporter and the fifth importer of goods in the world, with a share of 4.6% and 4.4% respectively (WTO, 2010 ). In addition, Japan provides key components for different industries like transport equipment, motor vehicles or electronics, playing an important role in the world supply chains of these products.

Japanese production capacity has been affected due to the catastrophic events that followed the earthquake of 11 March 2011. As a consequence, Japanese international trade patterns and levels are changing and affecting other economies in different ways. In this paper we explore these effects using a multiregional input-output model.

We analyze worldwide effects of different scenarios of trade including:

- A reduction of Japanese exports of components involving disruptions to the global manufacturing supply chain
- A fall of Japanese exports of final goods combined with a substitution by products from other regions.
- A decline of Japanese intermediate imports due to the contraction of Japanese output.
- An increase of Japanese imports of final goods to substitute the reduction in domestic production.

Keywords:

Natural disasters, economic effects, international trade, multi regional input output, Japan