

Evaluating Economic Effects of the 2004 Tsunami on International Trade

Topic: Risks and disasters

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This study aims to estimate the regional and global regional economic impacts of the 2004 Indian Ocean Tsunami within the GTAP (Global Trade Analysis Project) Global Computable General Equilibrium (CGE) model (<https://www.gtap.agecon.purdue.edu/models/current.asp>). The global CGE framework is selected to represent the relationship among the Tsunami affected countries (Indonesia, India, Sri Lanka, Maldives, and Thailand) and their major partners (Japan and US) in details.

Fewer studies exist regarding the disaster's impact on international trade. On the basis of the damage/loss information from various sources and of the previous modeling studies (Okuyama, 2010), this study will fill the gap by estimating the higher-order effect of the Tsunami, specifically in terms of international trade.

In addition to economic impact assessment at the sectoral/national/multi-national levels, the multi-country the GTAP-CGE framework for the Tsunami affected countries will also be used for policy recommendations. The simulation will analyze the case where the major economic partners of the Tsunami affected countries (US and Japan) commit to post-disaster international aid for recovery. The CGE model will be used to keep track of the feedback mechanisms between the international donor countries and Tsunami affected economies. Assuming that the aid helps the Tsunami affected countries to quickly rebuild the traditional trade links with US and Japan, the CGE model will be used to determine the optimal level of aid which would allow the donor countries to compensate for their economic losses from disrupted commercial links. Based on these results, further scenarios will be developed.

The CGE analysis will be conducted in a comparative static framework. The GTAP model is calibrated on 2004 data and includes 57 sectors. A detailed sensitivity analysis will complement the scenario analysis.