

How Do Supply Chain Networks Affect Resilience of Firms to Natural Disasters? Evidence from the Great East Japan Earthquake^{*}

Yasuyuki Todo[†]
Kentaro Nakajima[†]
Petr Matous[§]

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Abstract

This paper examines how supply chain networks affected resilience of firms to the Great East Japan earthquake, particularly looking at effects on the time period before resuming the operation after the earthquake and sales growth from the pre- to the post-earthquake period. The results indicate that expansion of supply chain networks has two opposing effects on resilience of firms to disasters. On the one hand, when firms are connected with more firms through supply chain networks, they are more likely to experience disruption of supplies and demands, which delays recovery. On the other hand, firms can benefit from diversified networks with suppliers and clients because they can substitute surviving firms in the network for damaged partners and receive support from surviving partners. Our results indicate that the latter positive effect on recovery exceeds the former negative effect for many types of network, implying that diversified supply chain networks lead to resilience of firms to natural disasters.

Keywords: economic resilience, natural disaster, supply chain networks

JEL classification: R10, L10, Q54

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[†] Corresponding author. Department of International Studies, the University of Tokyo, and Research Institute of Economy, Trade and Industry. 5-1-5 Kashiwanoha, Kashiwa, Chiba, 277-8563, Japan. Email: yastodo@k.u-tokyo.ac.jp. Tel.: +81-4-7136-4863.

[†] Graduate School of Economics, Tohoku University. 27-1 Kawauchi, Aoba-ku, Sendai, 980-8576, Japan. E-mail: nakajima.kentaro@gmail.com.

[§] Department of Civil Engineering, the University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo, 113-8656, Japan. Email: pmatous@gmail.com.