

Supply Chain Disruptions: Evidence from Great East Japan Earthquake

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Abstract

This paper quantifies the spillover effect of local exogenous shocks, such as earthquakes, to other firms through supply chain networks. Combining micro data on a large-scale inter-firm transaction network and geographic information on firm location, we examine the firm level impact of supply chain disruptions occurring in the aftermath of the Great East Japan Earthquake in 2011. When we focus on exiting firms in affected areas as the originating firms of spillovers, we find that sales growth of linked firms outside the area exhibits negative and significant effects for both upstream and downstream firms. Furthermore, the significantly negative effects on downstream firms are shown not only for directly linked firms but also indirectly connected firms with degrees of separation 2, 3, 4, and 5.

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