

Input Linkages and the Transmission of Shocks: Firm-Level Evidence from the 2011 Tohoku Earthquake

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Discussion by Teresa Fort

Big Picture Questions

- How important are global value chains in propagating shocks across countries?
 - ▶ Potential for amplification effects due to input linkages
 - ▶ Focus on traded intermediate inputs
 - ▶ Role for multinationals and intra-firm trade
- How substitutable are domestic and foreign inputs?
 - ▶ Key determinant of extent of propagation

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 - ▶ Large declines in imports and exports by Japanese subsidiaries
- Structural estimates of elasticity of substitution between domestic and foreign inputs
 - ▶ Suggest that production chains are rigid
 - ▶ Small shocks can be magnified

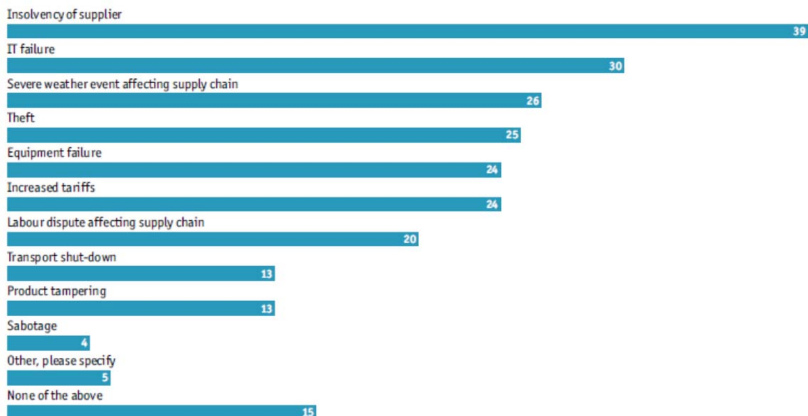
Comment 1: How representative is the analysis?

- Is supply chain disruption a common/important problem?

Supply chain risks

Which of the following events has your organisation experienced over the past year? Select all that apply.

(% respondents)

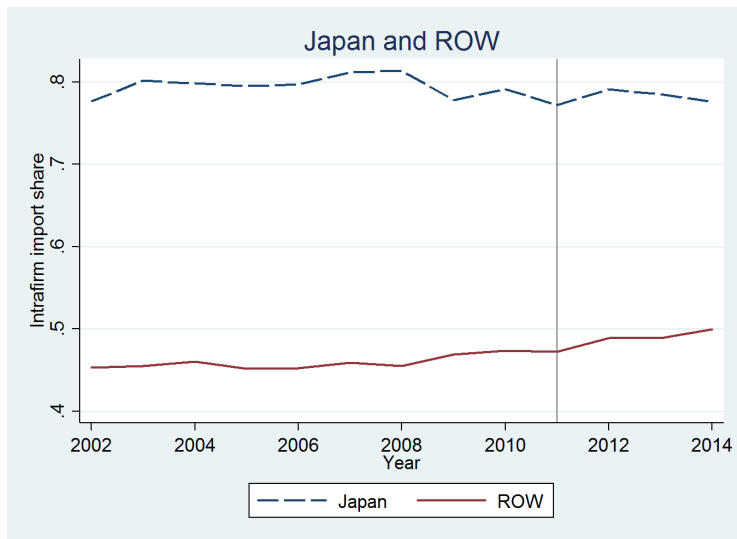


Source: *Economist Intelligence Unit 2009 survey of 500 executives*

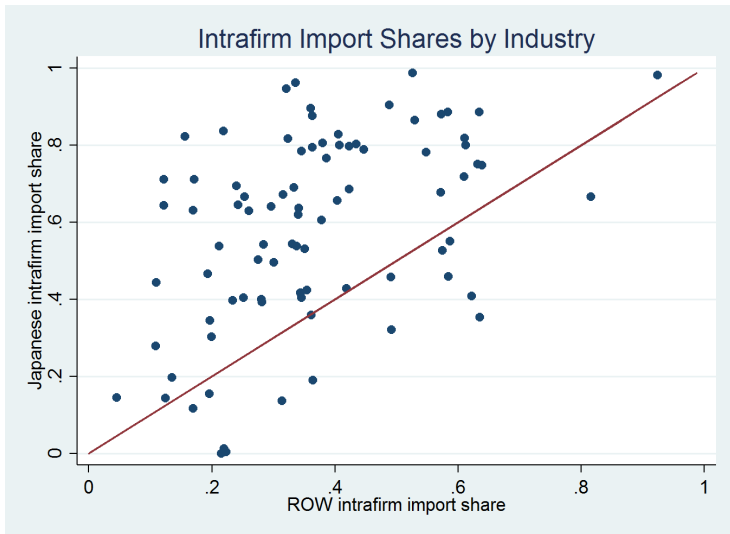
Comment 1: How representative is the analysis?

- Is supply chain disruption a common/important problem?
- How do Japanese MNEs compare to other firms?

U.S. Intrafirm Import Shares by Country



U.S Intrafirm Import Shares from Japan and ROW by Industry



U.S. Intrafirm Import Shares from Japan vs. Share of U.S. Plants that Purchase CMS



Comment 2: Reduced form evidence

- Authors estimate:

$$V_{i,t}^M = \alpha_i + \sum_{p=-4}^9 \gamma_p E_p + \sum_{p=-4}^9 \beta_p E_p JPN_{i,p} + u_{i,t}$$

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- Additional support for this mechanism
 - ▶ Can you exploit heterogeneity in impact across Japanese firms?
 - ▶ Does the impact increase in firm's share of Japanese inputs?
 - ▶ Do affected firms have lower energy or other variable cost expenditures?

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- How to aggregate micro elasticities?
 - ▶ Explanations for differences between Japanese and non-Japanese elasticities

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 - ▶ Role for outsourcing?
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 - ▶ Use ASM to assess effect to production workers
 - ▶ Heterogeneous effects within group of Japanese MNEs?
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- Optimal organization of supply chains
 - ▶ Single vs. multiple sourcing

Back-Up Slides

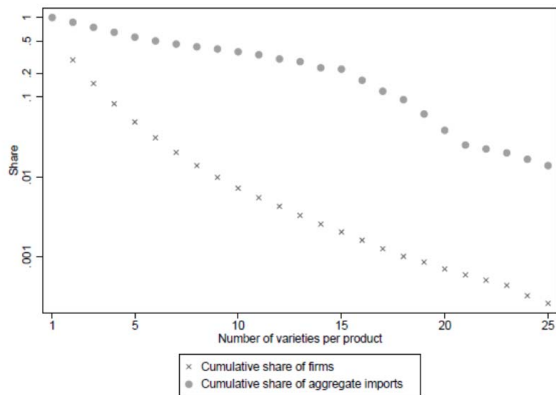
Single vs. multiple sourcing

- Number of countries per HS10 products imported by a firm

	Firm Level		
	Mean	Median	Max
Mean	1.11	1.00	1.61
Median	1.03	1.00	1.00
95%tile	1.78	1.00	4.00

Source: Antràs, Fort, and Tintelnot (2014)

Same product from multiple countries



Notes: The figure shows the the share of importers, who source at least C_i varieties per product and the share of aggregate imports these firms account for. C_i is the (expenditure share weighted) average of the number of varieties per product, i.e. $C_i = \sum_k s_{k,i} C_{k,i}$, where $s_{k,i}$ is the expenditure share of firm i on product k and $C_{k,i}$ is the number of countries firm i sources product k from. We use 6 years of data from 2001-2006 and report the yearly average.

Source: Blaum, Lelarge, and Peters 2013