Propagation of Shocks due to Natural Disasters through Global Supply Chains
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Summary

(Q1) Can micro-level shocks in a limited region propagate globally?
(Q2) If so, to whom, through what channel?

- Identification strategy
  - Exploit a natural disaster that creates exogeneous variation
  - Apply OLS estimation

- Main Findings
  - The negative shocks hampered the growth of customers of the damaged firms both in the US and Worldwide at equal magnitude.
  - Downstream propagation works, at least, up to the two-step customers.
  - Propagation patterns are heterogeneous depending on the characteristics of firms’ networks (i.e., shareholding structure, research collaboration).
Overall Impression

- Hot topic!

- A good natural experiment setting
  - Barrot and Sauvagnat (2016): historical natural disasters in the US
  - Boehm et al. (2015), Cavalho et al. (2016): the 2011 great east Japan earthquake

- Not surprising given the literature, but reinforce the evidence with some extensions
Suggestions: More Information

- Need more description about the event of hurricane Sandy such as...
  - Which area in the US was particularly hit (the hardest)?
  - Industry composition of the damaged region (compared to the one in other region)

- Importantly, readers would want to know about the direct effect.
  - How much regional economies or industries suffered from the disaster?

- Possible regional network
  - Given the locality of firm-to-firm connections, many customers of damaged firms could also have suffered directly.
  - What about customers of customers? where are they located?
Observed Rainfall (sourced from New York Metro Weather Archive)
Comments on Model Specification

- OLS is fine.

- Capturing the direct effect.
  - Include dummy variable that indicates whether firm $i$ was damaged directly.

- Should we care about the firm’s position in the supply chain network?
  - Degree, PageRank, Burt’s constraint, local clustering coefficient
  - Not clear how they affect the sales growth, but no sufficient explanation.

- What about some other conventional controls?
  - Investment in the previous few years, market concentration (e.g., HHI),...
Other (Minor) Comments

- Economic significance
  - How big is the indirect effect (compared to the direct effect)?
  - Contribution of the indirect effect to the US economy.

- Why only downstream propagation?
  - Would the shocks propagate to suppliers of damaged firms and their suppliers?
  - According to Acemoglu et al. (2016), no such upstream propagation.

- Measure of supply chain ties
  - the weighted number (or share) of suppliers with the weight being the sales share to firm $i$

- Inflation adjustment in the sales term (using GDP deflator...)
  - Matter for comparison of one-year growth & two-year growth.