Hidden Exposure: Measuring U.S. Supply Chain Resilience

A Discussion: The Shapes of Supply Networks
A useful taxonomy

Links

- Input requirements ("basic Leontief")
A useful taxonomy

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Shocks

• Technological (productivity)
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Interventions ("taming efforts")
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• Logistical (e.g., congestion)
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The perspective of this discussion:

Recent shocks raise important and new microeconomic questions even within a purely classical framework.
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Recent shocks raise important and new microeconomic questions even within a purely classical framework.

But they also raise new basic conceptual and modeling questions once we broaden each category.
The Leontief network

- chips
- cars
- resins
Criticisms of the Leontief approach

Issues with assessing exposure at industry × country level
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Elliott and Golub, "Networks and economic fragility"
Annual Review of Economics '22
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What is the shape of the firm-level network?

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several kinds (colors) of **essential** inputs are required at each stage of production
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there may be substitutable sources for each kind of input
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And fragility must be studied *before* aggregation (Elliott, G, Leduc AER 22).
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What are the distributions of shocks? (To nodes? To links?)

*Thoughtful modeling of shock structure needs to be combined with “exposure mapping.”*
A “new” type of shock

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Breadth: systemic vs. idiosyncratic
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Congestion at ports, containers in the wrong place. All shipping links likelier to fail.
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What are the first order feedbacks with other aspects of the economy?