

Discussion of “The Changing Structure of Global Value Chains and Technological Change: Evidence from the Firm-Level Patent Data,” by Keiko Ito

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Summary

- Are firms that are more centrally located in a GVC network more likely to innovate?
 - Yes, but only for firms with initially high technological capabilities
 - Those firms are also more likely to diversify technologically
- Very nice paper!

Methodology

- This paper links 2-digit input-output tables with firm-level patent data
- Two innovation measures:
 - # of patent applications, weighed by citation to adjust for quality
 - # of granted patents, quality-adjusted using OECD patent quality index
- Technological diversification: Entropy index, overall/within/across
- Instrument GVC centrality with average centrality of same industry in other countries (in same income group)

Main findings

- Higher GVC-central firms that also have high initial technological capabilities are more likely to increase their innovation output
- These firms are also more likely to diversify their technologies

Limitations

- Only large firms
- Network centrality defined for broad industry level (2-digit)
- Would it be possible to zoom in on a specific industry, for which there is more micro data available?

Some minor comments

- Figures 2–4 would be easier to read with a log scale
- Regression tables difficult to read
 - For example, what is the effect of a 1sd increase in GVC centrality for a firm with technological capabilities in the 10th percentile, relative to a firm with those in the 90th percentile?
- Some regression coefficients have the wrong sign. Can you comment on these?
- In some sense, the first part of the paper (changing trends in GVC centrality and innovation) is not really linked to the second part. Is the point that, because Japanese firms are losing GVC centrality → innovation ↓?

Final thoughts

- Very interesting paper on a very important topic.
- Everyone should read it!
- Looking forward to the next iteration.