

Discussion of “Knowledge Diffusion, Trade, and Innovation across Countries and Sectors”

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June, 2019

This paper

- ▶ Provides a unified framework
- ▶ of multi-sector, multi-country trade model
- ▶ with endogenous growth (R&D) and knowledge spillover

In particular

- ▶ Heterogeneity in knowledge production and spillovers
- ▶ across countries and across sectors

Big picture question

- ▶ What are the long-term welfare effects of trade (liberalization)?
- ▶ How are the gains distributed?

My (limited) understanding of the mechanism under study

- ▶ Trade increases market size and hence R&D incentives.
- ▶ Trade increases specialization.
- ▶ Knowledge spillovers erode individual gains but provide global gains.
- ▶ Suppose R&D is more productive in generating knowledge where knowledge stock is large, then
 - ▶ more trade implies more R&D
 - ▶ implies more growth but also greater specialization over time
 - ▶ implies more trade.

What the paper achieves

- ▶ Develop a formal model that can capture these effects
- ▶ Estimate trade costs and a reduced form knowledge production function with plenty of heterogeneity
- ▶ Then use these to calibrate model

Key findings

- ▶ There are substantial dynamic costs of trade barriers
- ▶ Welfare gains of liberalization in the dynamic view much larger than a static view suggests.
- ▶ The welfare gains are very heterogeneous across countries. EU countries gain most from trade liberalization, East Asian countries (China missing) gain least.

A lot of praise

- ▶ The dynamic view for welfare gains of trade turns out to be not only novel but important
- ▶ Rich paper: Complex model, substantial data work, clear implications
- ▶ Key insight: Gains from trade are very heterogeneous helps to understand debates of our time.

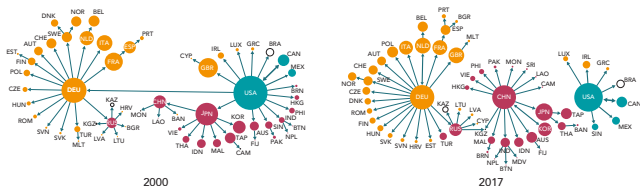
Some comments

- ▶ Data work seems to not control for country size. Might that matter?

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- ▶ Importance of the GER, UK, JPN, USA in spillovers coincides with been the American, European, Asian trade hubs for last decades.



from World Bank (2018)

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- ▶ Importance of the GER, UK, JPN, USA in spillovers coincides with been the American, European, Asian trade hubs for last decades.
- ▶ Could trade linkages directly influence knowledge spillovers? (think Doepke, de le Croix, and Mokyr (2018))

Potential of more trade *decreasing* R&D incentives, because of ideas leaking, decreasing specialization, decreasing trade...

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- ▶ Could trade linkages directly influence knowledge spillovers? (think Doepke, de le Croix, and Mokyr (2018))
- ▶ Would be nice to better understand where the heterogeneity is coming from. Yet the paper is dense already.