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Davin Chor
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- Propose a solution method for computing the world trading equilibrium:
  - PE module: Solve for industry equilibrium taking general equilibrium variables (aggregate incomes, factor prices) as given
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  - Iterate between PE and GE modules until convergence.
- Calibration strategy: Pin down some parameters based on the literature.

  Estimate the remaining structural parameters (θ, a, fixed costs of exporting) by NLLS to fit bilateral manufacturing trade flows in the GTAP database.

Overview and contributions (cont.)

- Implementation: Relatively aggregate observational units
  - 9 regions (CHN, NAF, LAM, EUR, EER, JKT, ROA, ANZ, ROW)
  - 7 sectors (only aggregate manufacturing with firm heterogeneity)

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  - 7 sectors (only aggregate manufacturing with firm heterogeneity)
- Counterfactuals: Reduction of ad valorem tariff barriers versus fixed cost barriers to trade in manufactures
  - Welfare gains much larger (4 times) with reduction of fixed costs of trade
  - Complementarity of reducing both fixed and variable trade costs
  - Interesting point: Biggest gainers appear to be developing regions as opposed to developed regions (presumably because of higher initial barriers)

General comments

- An important research agenda: Quantifying the welfare gains from trade liberalization in a setting with heterogeneous firms.

  Theoretical set-up is a natural extension of Melitz (2003)

- Numerical computation of general equilibrium is conceptually neat.

  Facilitated by neat aggregation in the Melitz model

- Plausible that gains from reducing fixed exporting costs are larger given relatively low level of recorded tariff barriers in GTAP (9.3%)

  Consistent with prior evidence that the extensive margin (number of exporting firms) matters more than the intensive margin (exports per firm) in accounting for the magnitude of trade flows
  (Eg Eaton, Kortum and Kramarz (2004))

Specification choices

- Fixed costs: $f_{rs} = f_r^p + f_s^x + f_{rs}^r$

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- For eg: f_{rs}^r much larger in magnitude for EER and ROW (Table 5), so a lot more residual variance in trade flows unexplained for these regions.

  Is it all due to fixed exporting costs, or is there something else systematically different about these regions?

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  Two side points:

- Presentation of fixed cost barriers: prefer if convert to monetary units ($f_{rs} c_r$ instead of f_{rs}).

- Some parameters already calibrated.

  Why not also calibrate θ and a from the literature, and leave only the fixed cost parameters to estimation?

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- Less keen on disaggregating sectors: Would have to worry about how parameters such as fixed costs might differ systematically across sectors.

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- Comparison with different structural framework where head-to-head competition determines who exports to whom: Eaton-Kortum (2002), Alvarez-Lucas (2007)
  - Would like to see welfare gains in a hypothetical zero-gravity exercise (reducing $\tau_{rs}(1 + t_{rs})$ to 1, and $f_{rs} \longrightarrow 0$)

Minor comments

1. Mention non-convexities: Natural question is uniqueness.

   Experimenting with different initial values in the algorithm should ease this concern.

2. A little more description of the variables taken from GTAP