Discussion of "Chinese Exports and U.S. Import Prices"

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Summary of the Paper

- There are no data on marginal costs, markups or trade costs
  - Measures depend on the model employed
- Usage of alternative models is the key to have a range
- Two options:
  - Assume functional forms for production and/or consumption
    - Obtain distribution of variables
    - Directly assume distributions of variables
  - This paper goes with both although it emphasizes the latter
    - Decomposing markups versus marginal costs through production-side
- Show that increasing Chinese exports
  - Coincide with increasing marginal costs of other exporters
    - Is it quality? Maybe.
    - But hard to know what is going on using only this information, especially when data on quality are not employed
  - Coincide with shrinking markups of other exporters
    - Do markups increase with quantity sold?
    - Do markups decrease with quantity sold?
Pros and Cons

- Convenient empirical strategy.
- All you need is:
  - Pareto distribution for productivity
  - Pareto distribution for markups
  - First three moments of prices
- Results depend on the distributional assumptions
- A production-side investigation NOT using any quantity data
  - Using prices versus quantities might help for identification
- Productivity as the only source of marginal costs
  - What about wages in the source country?
  - No GE effects, which is fine in PE world
- Markups under CES versus Non-CES are similar to other studies
  - Although they are relatively higher in this paper
  - Yilmazkuday (2013) - CARA utility functions (more on this below)
Pros and Cons

- The assumptions hold before and after China
  - No Chinese effects on distribution of productivities or markups?
- The analysis ignores the interaction across industries
  - Aggregation problems
- It is claimed in the paper that Chinese exports:
  - Start with low cost/quality
  - Subsequently improve quality and reduce markups
    - Both may well be due to increasing wages in China over time.
- Increasing Chinese exports
  - Shown to be coinciding with increasing marginal costs and shrinking markups of other exporters
    - Is it quality? Maybe. But, we cannot be sure.
  - Maybe there is another reason for increasing costs
    - Exchange rates? (See next page)
    - Lower markups are consistent with incomplete pass-through
The Value of U.S. Dollar
Results Depend on Assumptions

- What if we have a demand-side analysis as in Yilmazkuday (2013)?
- Focus on the intensive margin in a non-CES framework.
- Assume the following CARA utility:

\[
U^g_t = \sum_s \chi^g_{s,t} \left( 1 - e^{-\theta^g q^g_{s,t}} \right)
\]

where \( \chi^g_{s,t} \) represents quality as in Hummels and Klenow (2005; AER).

- Optimization results in:

\[
q^g_{s,t} = \frac{E^g_t - \frac{1}{\theta^g} \sum_{s'} \ln \left( \frac{\chi^g_{s',t}}{p^g_{s',t}} \right) p^g_{s',t}}{\sum_{s'} p^g_{s',t}} - \frac{\ln \left( p^g_{s,t} \right)}{\theta^g} + \frac{\ln \left( \chi^g_{s,t} \right)}{\theta^g}
\]

for estimation using Feenstra (1994) to consider simultaneity bias.

- Also consider the pricing decision of exporters:

\[
\ln p^g_{s,t} = \ln c^g_{s,t} + \ln \tau^g_{s,t} + \ln \mu^g_{s,t} = \ln c^g_{s,t} + \ln \tau^g_{s,t} + \theta^g q^g_{s,t}
\]

Good-and-Time-Fixed Effects

Price Effects

Quality/Taste

for estimation using Feenstra (1994) to consider simultaneity bias.
Relation between Estimated Quality and Marginal Costs

- Use HTS 10-digit good level between 1996-2012.
- Identify marginal costs:
  \[
  \ln c_{s,t}^g = \ln p_{s,t}^g - \ln \tau_{s,t}^g - \theta^g q_{s,t}^g
  \]

- Test the relation between marginal costs and quality using:
  - Time fixed effects
  - Good fixed effects
  - Source fixed effects
  - Good and time fixed effects
  - Source and time fixed effects

- The regression is:
  \[
  \log c_{s,t}^g = \delta^c \log \chi_{s,t}^g + \delta_t + \delta^g + \delta_s + \delta_t^g + \delta_{s,t} + \log \kappa_{s,t}^g
  \]

- Results in:
  \[
  \hat{\delta}^c_\chi = 1.05 \quad \text{with } R^2 = 0.99 \quad (0.05)
  \]

confirming the relation between quality and marginal costs.
Estimated Marginal Costs for Non-Chinese Exports - Non-CES
Estimated Quality for Non-Chinese Exports - Non-CES
Estimated Markups for Non-Chinese Exports - Non-CES

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Chinese Exports and U.S. Import Prices

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Results Depend on Assumptions

- What if we have a demand-side analysis as in Yilmazkuday (2013)?
- Focus on the intensive margin in CES framework.
- Assume the following CRRA utility:

\[
U_t^g = \sum_s \chi_{s,t}^g (q_{s,t}^g)^{1-\theta^g}
\]

where \(\chi_{s,t}^g\) represents quality as in Hummels and Klenow (2005; AER).

- Optimization results in:

\[
\ln (q_{s,t}^g) = \ln \left( E_t^g \left( \sum_{s'} \frac{\chi_{s',t}^g}{p_{s',t}^g} \right)^{-1} \right) + \frac{\ln (p_{s,t}^g)}{\theta^g} + \frac{\ln (\chi_{s,t}^g)}{\theta^g}
\]

- Also consider the pricing decision of exporters:

\[
\ln p_{s,t}^g = \ln c_{s,t}^g + \ln \tau_{s,t}^g + \ln \mu_{s,t}^g = \ln c_{s,t}^g + \ln \tau_{s,t}^g - \ln (1 - \theta^g)
\]
Relation between Estimated Quality and Marginal Costs

- Use HTS 10-digit good level between 1996-2012.
- Identify marginal costs:
  \[ \ln c_{s,t}^g = \ln p_{s,t}^g - \ln \tau_{s,t}^g + \ln (1 - \theta^g) \]

- Test the relation between marginal costs and quality using:
  - Time fixed effects
  - Good fixed effects
  - Source fixed effects
  - Good and time fixed effects
  - Source and time fixed effects

- The regression is:
  \[
  \log c_{s,t}^g = \delta^c \log \chi_{s,t}^g + \delta_t + \delta^g + \delta_s + \delta^g_t + \delta_{s,t} + \log \kappa_{s,t}^g
  \]

- Results in:
  \[
  \hat{\delta}_\chi^c = 0.30 \quad \text{with} \quad R^2 = 0.97 \ (0.01)
  \]

confirming the relation between quality and marginal costs.
Estimated Quality for Non-Chinese Exports - CES

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In the absence of data, the results highly depend on modeling strategy.

- Crozet et al. (2012) is an exception using data on quality.

Using data only on prices (as in the discussed paper):

- results in increasing marginal costs over time
- does not mean anything for quality

An analysis using data on both price and quantity may help:

- to identify quality changes
- test the relation between quality and marginal costs

More work is necessary in this field.