

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

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June 2013 - Dallas Fed

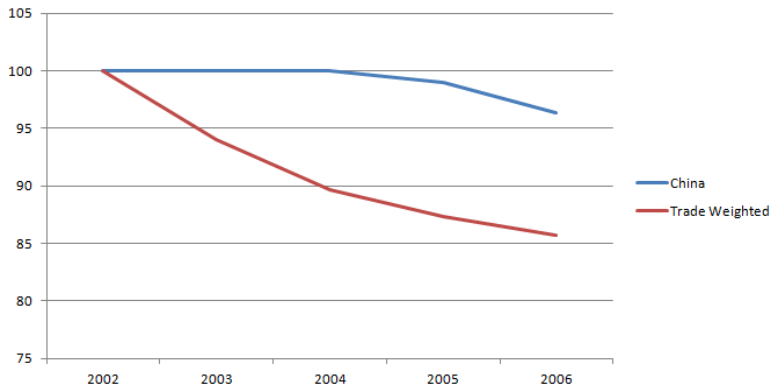
Summary of the Paper

- 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?

- 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)

- 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:

$$U_t^g = \sum_s \chi_{s,t}^g \left(1 - e^{-\theta^g q_{s,t}^g} \right)$$

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

- Optimization results in:

$$q_{s,t}^g = \underbrace{\left(\frac{E_t^g - \frac{1}{\theta^g} \sum_{s'} \ln \left(\frac{\chi_{s',t}^g}{p_{s',t}^g} \right) p_{s',t}^g}{\sum_{s'} p_{s',t}^g} \right)}_{\text{Good-and-Time-Fixed Effects}} - \underbrace{\frac{\ln(p_{s,t}^g)}{\theta^g}}_{\text{Price Effects}} + \underbrace{\frac{\ln(\chi_{s,t}^g)}{\theta^g}}_{\text{Quality/Taste}}$$

- Also consider the pricing decision of exporters:

$$\ln p_{s,t}^g = \ln c_{s,t}^g + \ln \tau_{s,t}^g + \ln \mu_{s,t}^g = \ln c_{s,t}^g + \ln \tau_{s,t}^g + \theta^g q_{s,t}^g$$

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:

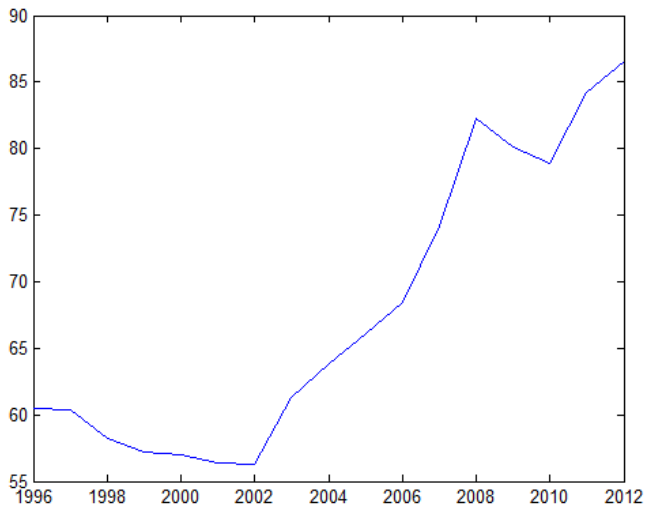
$$\underbrace{\log c_{s,t}^g}_{\text{Marginal Costs}} = \underbrace{\delta_\chi^c \log \chi_{s,t}^g}_{\text{Quality}} + \underbrace{\delta_t + \delta^g + \delta_s + \delta_t^g + \delta_{s,t}}_{\text{Fixed Effects}} + \underbrace{\log \kappa_{s,t}^g}_{\text{Residuals}}$$

- Results in:

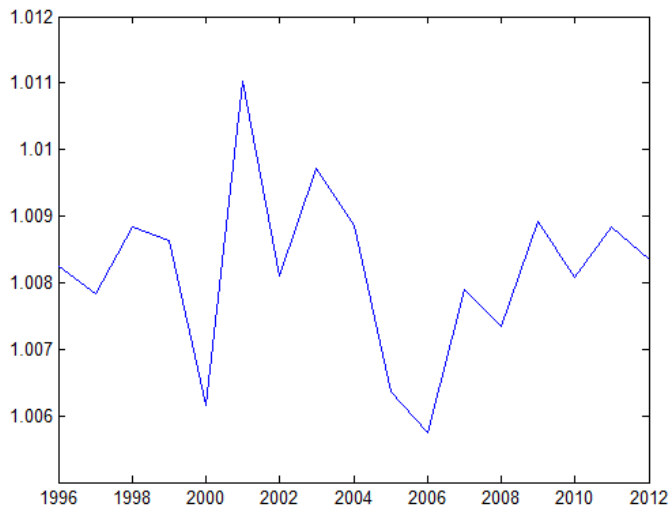
$$\hat{\delta}_\chi^c = \frac{1.05}{[1.05, 1.06]} \quad \text{with } R^2 = 0.99 \quad (0.05)$$

confirming the relation between quality and marginal costs.

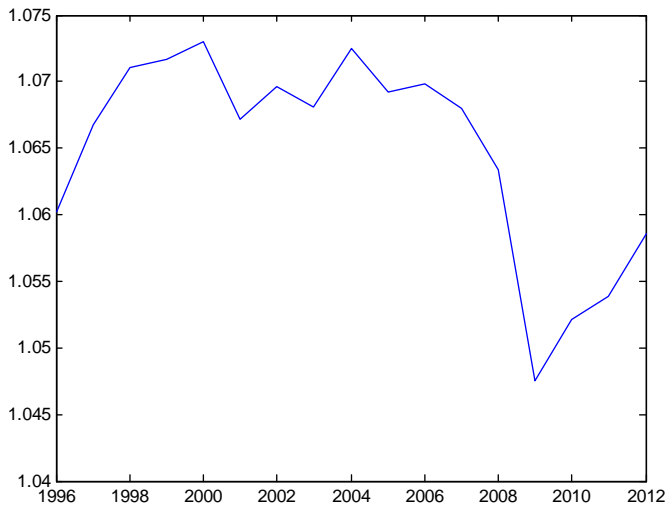
Estimated Marginal Costs for Non-Chinese Exports - Non-CES



Estimated Quality for Non-Chinese Exports - Non-CES



Estimated Markups for Non-Chinese Exports - Non-CES



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:

$$\ln(q_{s,t}^g) = \underbrace{\ln \left(E_t^g \left(\sum_{s'} \frac{(\chi_{s',t}^g)^{\frac{1}{\theta^g}}}{(p_{s',t}^g)^{\frac{1-\theta^g}{\theta^g}}} \right)^{-1} \right)}_{\text{Good-and-Time-Fixed Effects}} - \underbrace{\frac{\ln(p_{s,t}^g)}{\theta^g}}_{\text{Price Effects}} + \underbrace{\frac{\ln(\chi_{s,t}^g)}{\theta^g}}_{\text{Quality/Taste}}$$

- 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:

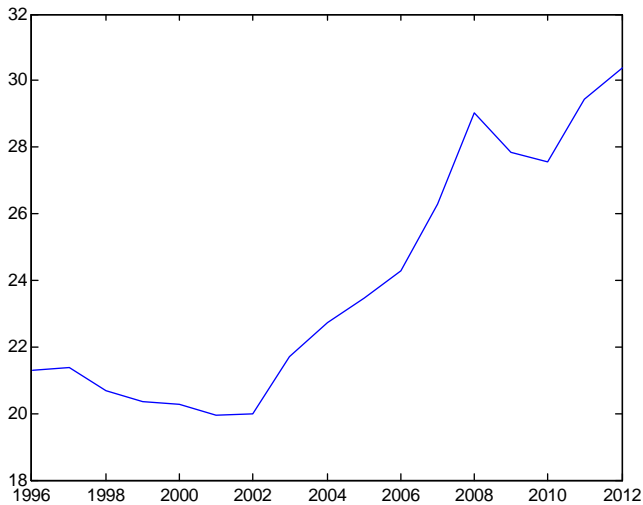
$$\underbrace{\log c_{s,t}^g}_{\text{Marginal Costs}} = \underbrace{\delta_\chi^c \log \chi_{s,t}^g}_{\text{Quality}} + \underbrace{\delta_t + \delta^g + \delta_s + \delta_t^g + \delta_{s,t}}_{\text{Fixed Effects}} + \underbrace{\log \kappa_{s,t}^g}_{\text{Residuals}}$$

- Results in:

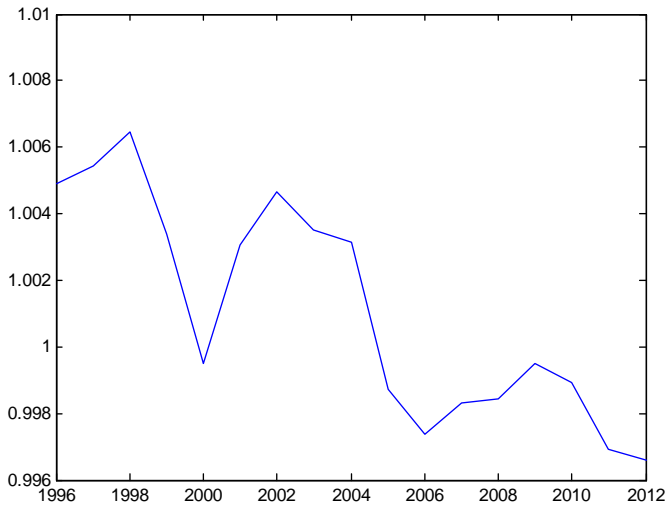
$$\hat{\delta}_\chi^c = \frac{0.30}{[0.29, 0.32]} \quad \text{with } R^2 = 0.97 \quad (0.01)$$

confirming the relation between quality and marginal costs.

Estimated Marginal Costs for Non-Chinese Exports - CES



Estimated Quality for Non-Chinese Exports - CES



Product- versus Demand-Side Analysis

- 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.