Discussion of: "Export Destinations and Input Prices: Evidence from Portugal" by Paulo Bastos, Joana Silva, and Eric Verhoogen

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June 2013
Dallas Fed - SNB Conference on Prices

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Question

- Why are export prices higher for rich destinations?
  - Existing debate.
  - Pricing to market or
  - quality differences?
- This paper: quality differences.

Important for many areas

- Measuring productivity.
- The pattern of trade.
- Pass-through.
- Problems with measuring quality: typically unobservable in data.
  - Most empirical support has relied on anecdotal evidence.

Idea

- Argument: product-quality effect will show up in prices of imports, pricing to market will not.
  - Producing higher quality output requires higher quality inputs.
  - Higher quality inputs should have higher price - link average destination income with prices of inputs.
- Recent empirical evidence: Kugler and Verhoogen (2012) and Manova and Zhang (2012).
- Test the hypothesis by examining the data through the lens of a model.

Approach

- Construct a model where firms choose quality of inputs and quality of output.
- Derive testable implications for prices of output and inputs.
- Empirically assess the model's testable implications by using exchange rate movements as a source of exogenous variation.

Model

- Three country Melitz-type model: home, north and south ($i = h, n, s$).
- Final consumers in each country value quality differently.
- Each country operates three production lines: final output from each line is sold to a particular destination ($j = h, n, s$).
  - Produce inputs of any quality level using labor.
  - Inputs combined with firm's capability, $\lambda \sim$ Pareto, to produce final goods.
  - Quality of final good depends on the quality of the inputs and the firm's capability (complements) both qualities are choices by firms.
- Homogeneous goods sector: productivity pins down wage in each country, w_i.

Testable implications

- $\bar{p}^*_{Oh}(\lambda)$ is average price of output across three production lines for firm λ.
- $\bar{p}^*_{Ih}(\lambda)$ is average price of inputs across three production lines for firm λ.
- w_n and w_s are GDP per capita in north and south resp.
- How average prices respond to exogenous shocks:

$$\frac{\partial \bar{p}^*_{Oh}(\lambda)}{\partial w_n} \geq 0 \qquad \frac{\partial \bar{p}^*_{Ih}(\lambda)}{\partial w_n} \geq 0$$

$$\frac{\partial \bar{p}^*_{Oh}(\lambda)}{\partial w_s} \leq 0 \qquad \frac{\partial \bar{p}^*_{Ih}(\lambda)}{\partial w_s} \leq 0$$

Empirical specification

- Portuguese data.
- Tease out the price of "common goods" across firms i for products k at time t – separately for inputs and outputs.

$$\ln p_{ikt} = \theta_{it} + \psi_{kt} + u_{ikt}.$$

- Regress the price "common goods" for firm i at time t against destination income and control for export share of sales and total sales as well as time and source-country fixed effects.

$$\hat{\theta}_{it} = inc_{it}\beta_1 + X_{it}\beta_2 + a_i + b_t + \varepsilon_{it}.$$

- Issue: composition of export destinations is not orthogonal to shocks that affect input prices – *inc* is endogenous.
  - Solution: Use real exchange rate weighted by firm's revenue composition across locations as an instrument for *inc*.

Main results

- Instruments: real appreciations in richer partner countries is positively correlated with increases in average destination income.
- Destination income positive and significant in explaining average output prices across firms.
  - Consistent with existing literature: positive relationship b/w export prices and destination income.
- Destination income positive and significant in explaining average input prices across firms.
  - Main point: product quality plays a non-trivial role.
- Coefficient on export share of sales is insignificant $\Rightarrow$ exporting per se does not matter, but the destination of exports does.

Issues and suggestions

- The empirical exercise does not utilize entire structure of the model.
  - Can not assess how much of export-price differences can be explained by quality vs pricing to market.
- Testable implications depend on asymmetry in barriers: authors assume symmetry.
  - $p^*_{Oj}(\lambda) = \left(\frac{\sigma}{\sigma-1}\right) w_i \tau_{ij} (2\mu_j - 1)^{\frac{-1}{2\theta}} \lambda^{\frac{b}{2}-a}$.
  - Poor countries face larger barriers of exporting to richer countries (Waugh 2010).
  - Structural gravity equation in standard trade models (no quality) $\Rightarrow \frac{x_{ji}}{x_{ii}} = \left(\frac{P_i}{P_j}\right)^{\frac{1}{1-\sigma}} \tau_{ji}^{\frac{1}{1-\sigma}}$
  - Can quality account for asymmetry in barriers?

Additional comments to think about

- Given the asymmetry in bilateral trade flows, we would expect that rich countries produce and export higher quality goods on average.
  - Authors focus on one exporter for the empirical exercise.
  - What about average prices of exports across various sources?
- Flush out some details of the literature on pricing to market, e.g., Simonovska (2010) and Alessandria and Kaboski (2011).