Discussion of "Exporters and Shocks"

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June 1, 2013

Overview

- Trade is surprisingly unresponsive to (real) exchange rate changes and surprisingly responsive to tariff changes.
- Major potential explanations
    1. Sunk costs/extensive margin
    2. Incomplete exchange rate pass through (price frictions)
    3. Intensive margin adjustment costs (quantity frictions)
- This paper: use firm-level data from Ireland to document this at the micro level and help sort out some of these explanations

Estimation strategy - participation

- Annual exports by firm i in market k at time t from Ireland over 2000-2009
- Participation X_t^{ik} estimating equation (linear probability model):

$$\Pr[X_t^{ik} = 1] = \alpha^k + c_t^i + \beta' \mathbf{z}_t^{ik} + \phi X_{t-1}^{ik} + (\text{interactions}) + \epsilon_t^{ik} \quad (1)$$

- α^k market fixed effects, c_t^i firm-year fixed effects
- $\mathbf{z}$ includes real exchange rate, firm-market-year ad valorem tariff, and GDP minus exports (destination currency).
- Tariff measure for each firm is production-weighted changes in tariffs.
- Interactions: size x macro variables; revenue x export participation; macro variables x export participation; size x macro variables x export participation; revenue x macro variables x export participation

Estimation strategy - revenue

- Revenue (r_t^{ik}) estimating equation:

$$\Delta r_t^{ik} = \alpha^k + c_t^i + \sum_{j=0}^{J} \beta_j' \Delta \mathbf{z}_{t-j}^{ik} + \gamma' \mathbf{a}_{t-1}^{ik} + \eta_t ik \qquad (2)$$

- α^k market fixed effects, c_t^i firm-year fixed effects, $\mathbf{a}_{t-1}^{ik}$ age-in-market fixed effects
- Baseline: only firms which exported to market k in every year during the sample.

Main results

Participation

- Firms more likely to export after a depreciation, with larger firms more sensitive (10% depreciation $\rightarrow$ 0.2 ppt increased probability of export)
- Following a tariff reduction, large firms more likely to export/stay exporting
  - Large firms: 10% reduction $\rightarrow$ 0.3 ppt increased probability of export and 3.4 ppt reduced probability of exit
  - Small firms: 10% reduction $\rightarrow$ 0.2 ppt *decreased* probability of export and 5.4 ppt *increased* probably of exit.

Revenue

- 10% depreciation $\rightarrow$ 9.7% increase in export revenue
- 10% tariff reduction(lagged) $\rightarrow$ 197% increase in export revenue (large standard error)

Imported intermediates

- Imported intermediates reduce exchange rate pass-through (Goldberg and Campa 2010; Amiti, Itkshoki, and Konings 2012, ...)
- Supply chains and vertical specialization can increase the response of *gross* trade flows to tariff changes (Yi 2003).
 - Interesting exercise to exploit this heterogeneity across firms and time (trend changes)
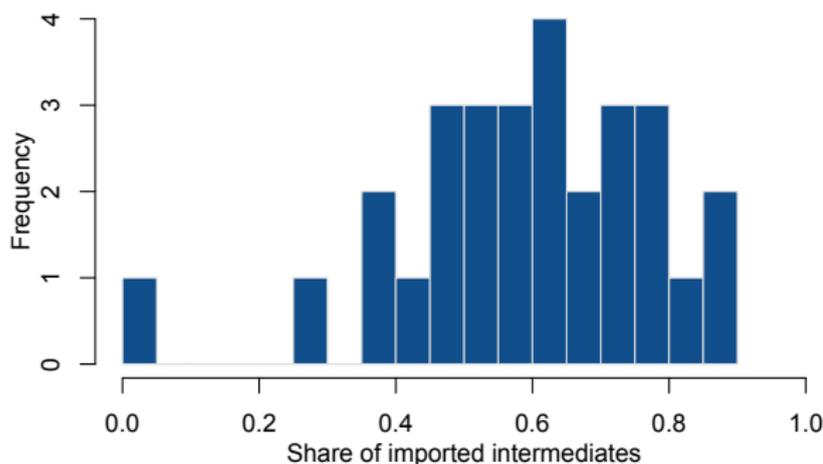
Data source: Goldberg and Campa (2010) for Ireland in 1998 by CPA sectors

Anticipated tariff reductions

- The tariff reductions in the sample are known years in advance (Uruguay Round concluded in 1994)
- What should we expect from an anticipated tariff reduction? It depends.
- Consider a simple model of small open economy importing from Ireland:
    - Log utility over consumption
    - Bond market with interest rate $1 + r = 1/\beta$ and bond holding costs ala Schmitt-Grohe and Uribe (2003)
    - Armington aggregation over home good and foreign good, elasticity $\theta = 4$.
    - Exogenous price of imported good, to be reduced by 10%
    - No uncertainty
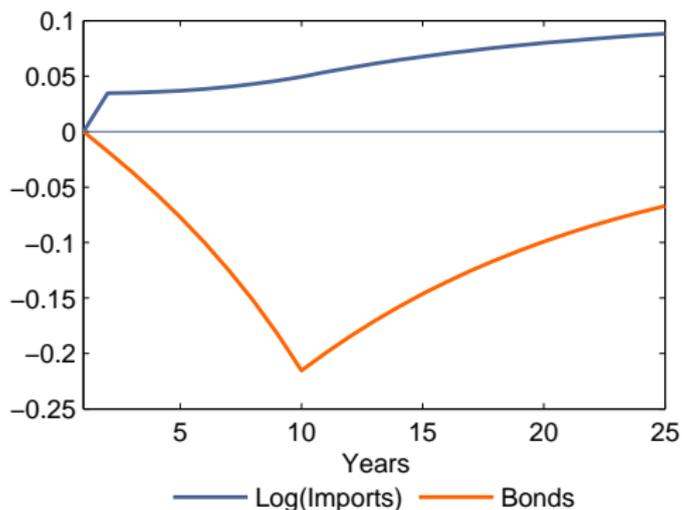   - Tariff reduction announced in period 2, takes effect in period 10.

Anticipated tariff reductions - "model"

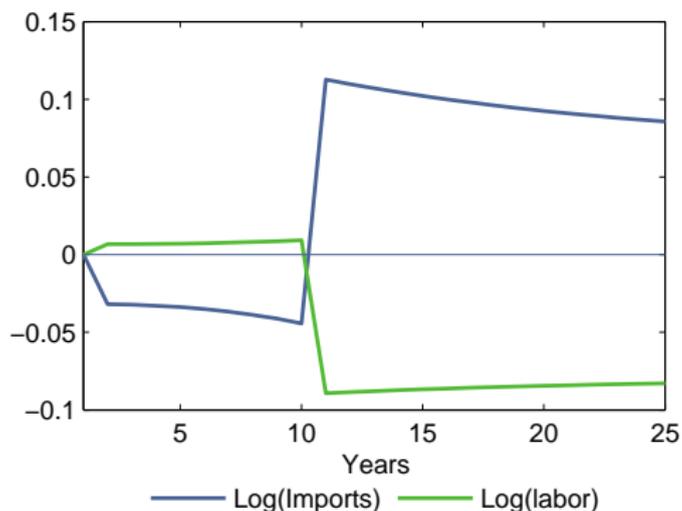- Constant endowment of home good
- High bond holding costs
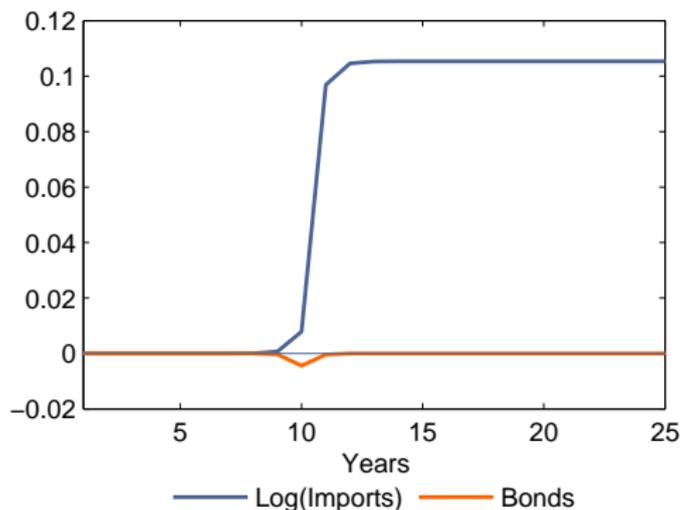
Anticipated tariff reductions - "model"

- Constant endowment of home good
- Low bond holding costs

Anticipated tariff reductions - "model"

- Production with perfect competition using only labor
- Linear disutility of labor

Log(Imports) ——— Log(labor)

Asymmetric/non-linear responses?

- Some explanations (e.g. sunk costs) might imply asymmetries and/or non-linear effects, at least in partial equilibrium
- In this sample, non-linearities are easier; all major currencies had a trend depreciation with few appreciations.
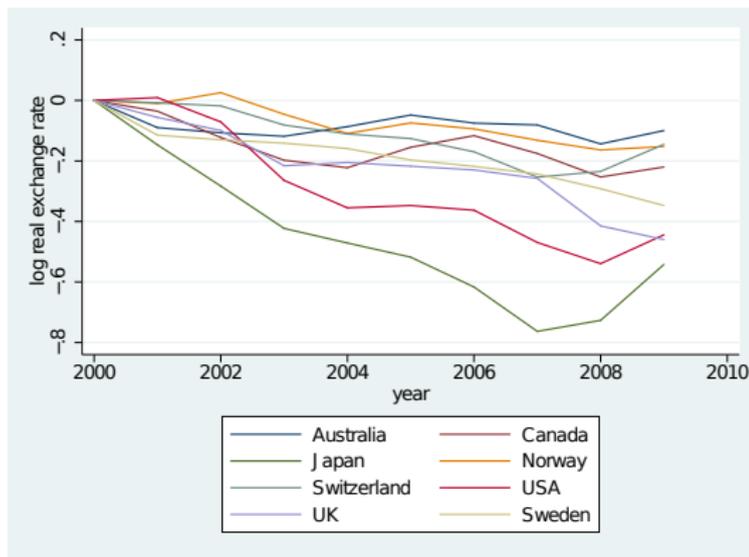

Figure 4: Annual average real exchange rates: Non-Euro destinations

Other comments

- It would be interesting to see a combined calculation (back of the envelope?) combining the participation and revenue estimates to decompose aggregate changes in trade along the extensive and intensive margins.
  - ▸ Summary stats show a limited role for the extensive margin
- Surprising lack of significance on demand (GDP - exports) in sales regression.
- Why not more interactions in revenue regression? (e.g. Berman et al. 2012)

Conclusion

- A very nice paper which helps to distinguish between the extensive/intensive margin explanations for the small response of exports to exchange rates and the large response of tariffs
- Largely consistent with past-evidence, both micro and aggregate
  - Exports respond little to exchange rate changes and respond a strongly to tariff liberalizations
- The extensive margin, while (statistically) affected by both exchange rates and tariffs, is not important for aggregate trade over short horizons