Discussion of
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How do different exporters react to exchange rate changes? Theory, evidence and aggregate implications

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The views in this discussion are those of the author and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

Paper overview

- Heterogeneous firm model of exporter response to exchange rates used to explain "elasticity pessimism"

  - extensive margin, intensive margin

- Key roles are assigned to producer heterogeneity, iceberg trade costs, fixed export costs, and distribution costs

- BMM examine disaggregated data on French exporters

  - More productive firms account for most of the extensive margin adjustment, but their quantities respond little.

  - Low productivity firms have a smaller market share, but higher quantity elasticity. These enter/exit w ERs within 1 year.

- Nice paper! Simple model, confirmed by empirics that are informative, carefully executed, lots of robustness. Builds on literatures on pass through, trade elasticities, heterogeneity, with micro data on choice of trade P, Q, exit and entry.

Structure of my discussion

- Short preamble on "elasticity pessimism"
- Model insights
  - Key assumptions, with suggestions.
    - Structure of distribution costs in trade
    - Form of producer exposure to exchange rates
    - Assumptions about invoice currencies, price flexibility, horizon for assessing fixed costs of accessing a market
- Empirical application
  - Very cool data and interesting results from France (95-05)
    - Confirms patterns predicted by the theory!
  - Are observations borne out in another very cool dataset?
- Next steps? Is the highlighted channel the most important one?

Preamble: "Elasticity pessimism" view not universal. E.g. see overview IMF *WEO* April 2007

- Cross-country experience supports real exchange rates playing important supportive role in unwinding trade imbalances

- Standard empirical trade models may underestimate U.S. trade volume responses to relative prices if they fail to account for

  - large differences in response across sectors (aggregation bias)

  - the degree to which imports embody domestically produced intermediate products (local content, vertical integration bias)

- Elasticity pessimism is strongest where entry and exit is more difficult, either because of rigidities in product and labor markets or because of trade protectionism.

- Studies recognize that integrated production changes elasticity of response to bilateral exchange rates.

The model: Three key features, with intuition

- Heterogeneity of firms
  - Provides differentiation across firms in their marginal costs
  - More productive firms have room to adjust markups (pricing to market) and face less volatile demand given ER shocks.
- Presence of fixed costs to export.
  - Not dependent on scale of exports, so more productive and larger firms self select as exporters, with some marginal entry/ exit.
  - Eg. Melitz (2003 Econometrica) type intuition; consistent with results from large micro databases on characteristics of exporters
  - Size of fixed costs depends on ERs, so nonlinear ER effect
- Distribution costs in destination market
  - The destination market costs reduce the share of the price accounted for by the "export". With exporter value added smaller, the fraction of costs sensitive to exchange rates declines, the final price is less sensitive to exchange rates, and quantity changes are smaller.
  - Eg. Corsetti and Dedola (2005 JIE)
- (Iceberg trade costs assumed too – not sure these are needed.)

Comments on the Structure of Costs

1. Assumption: Fixed costs of exporting, destination specific.

   - Need more justification of <u>timing</u> and <u>structure</u>
     - The decision is multiperiod, not a static problem.
       - Recall work on beachheads /hysteresis in trade literature: Baldwin and Krugman, Dixit on option approach
     - Exporters assess whether currency movements are transient or permanent (transitory exchange rate movements reduce the role of the extensive margin)
     - Exporters also consider exit costs, as well as entry costs again reducing the extensive margin
     - No multi-country scale economies
   - Where are these costs in the data? <u>How large</u>? How measured?

- Bottom line: I expect main insights of paper are robust to these issues. But the structure of empirics and the quantitative results would change, allowing for richer introduction of ERs and time.

Comments on the Structure of Costs

2.   Assumption: distribution costs on all exports

   ❑ While not directly part of producer costs, these destination specific costs influence the price charged consumers, and damp the demand sensitivity to exchange rates, influencing markups.

   ❑ The BMM assumptions of the structure of these costs bias downward exporter P and Q sensitivity to ERs.

   ❑ While distribution costs are often "outsourced" services, they are:

      ▪ Incurred **both** at home and in destination market, not only in the destination market.

      ▪ Not the same for exporter sales as for domestic sales

      ▪ Not exclusively in destination currency terms. Distribution costs are sensitive to ERs via imported inputs and fuels etc.

      ▪ BMM assumption constrains the share of total costs sensitive to ERs, and downward biases ER effects

(see Campa and Goldberg *ReStat* 2009)

The quantitative exercise treats these margins as applying at the level of final consumption goods

- BMM uses the highest margins – but their specific application to trade costs treats all exports as final consumption goods.
- CG (ReStat 2009, on 21 OECD countries, for 29 industries) show that distribution expenditures vary dramatically across industries, and depend on whether customers are consumers, firms, or govt.

	Wholesale-Retail	Transport	Total
FR: HH Consumption	27.3	6.2	33.5
FR: Fixed Capital	8.0	1.4	9.4
US: HH Consumption	40.9	1.8	42.8
US: Fixed Capital	13.9	1.6	15.5
By Industry – includes G, I, C	Average	Maximum	Minimum
France	19.4	62.3	1.0
United States	23.9	70.4	4.7

Comments on the Structure of Costs

2. Assumption: distribution costs on all exports

❑ Note: The model does not have imported inputs in production!

Country	I-O year	*Imported input share* T	*Imported inputs share* *NT*
France	2000	0.20	0.08
Germany	2000	0.27	0.09
Sweden	2000	0.35	0.16
United States	1997	0.10	0.03

❑ By excluding imported inputs, BMM likely overstate price and quantity response to bilateral exchange rates.

❑ These imported inputs are a competing explanation for "pessimism"

❑ Also, if imported inputs are not from the same bilateral partner, empirics need to account for appropriate other ERs

What's missing? Frictions are all via contemporaneous costs. There is no intertemporal optimization! No pricing rigidities.

- Important omissions, since these rigidities are a well-documented feature of the data.

- Gopinath and Itskhoki (QJE forthcoming) document that the invoicing currency tends to be the currency in which prices are rigid, price changes can be infrequent.

- If sticky prices assumed, need to also account for the choice of invoicing currency (PCP,LCP, VCP).

- Empirics may need to

  - add other exchange rates into the empirical exercise and richer timing of consequences.

  - more carefully account for the timing of the exports (spread thru year) and the exchange rate changes (over same year)

Another interesting dataset shows that these invoice currency issues are important for the French exporters.

- Goldberg and Tille (GT 2009) "Micro, Macro and Strategic Forces in International Trade Invoicing"

- Data on Canadian imports from Canadian Customs / Statistics Canada. Covers all imports from Feb. 2002 to Feb. 2009.

  - 44.5 million observations. Country of origin, invoicing currency, industry (up to HS10), contract amounts.

  - French exports to Canada: 848,000 observations.

    - I examined the prevalence of PCP, VCP, LCP in this data.

    - Tested the determinants of these choices.

    - Measured the changing distribution of exporter (export transaction) size and its correlation with the CAD/euro.

In French exports to Canada, VCP (US$) dominates. PCP and LCP split depends on transaction size.

All Canadian Imports from France, by Transaction Count
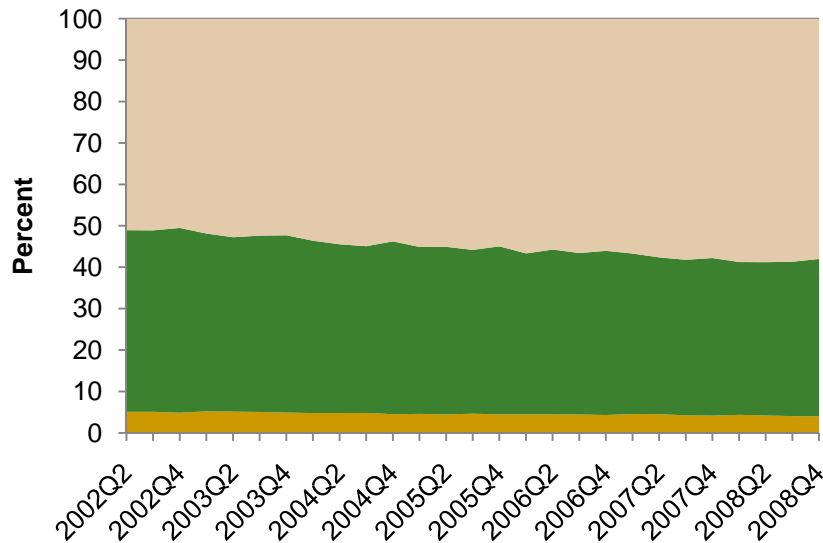
All Canadian Imports from France, by Transaction Value
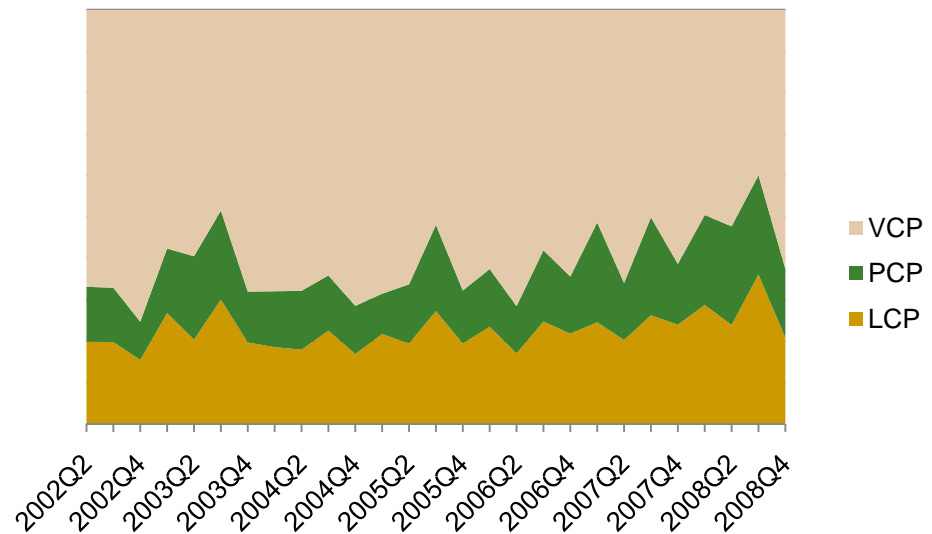
- LCP more active in the very large French exports to Canada
  - GT 2009 finds this across countries and across industries
  - Role of customer bargaining power and differentiated goods.
- Econometric determinants of French exporter invoicing choices are consistent with broader patterns across all exporter groups.

BMM intuitions are supported, but these results suggest:

Time frame for analysis matters since there are price rigidities and prices are adjusted infrequently.

Price rigidities depend on whether producers are LCP, PCP, VCP; also may influence the range of exchange rates introduced into the analysis. $/euro exchange rate may enter French exporter decision-making.

Ex ante anticipated versus ex post observed changes in exchange rates ("surprises") matter for ex post observed price adjustment

❑ Under LCP, customers charged higher ex ante prices (producers absorb currency risk), with less ex post quantity adjustment.

❑ Under PCP, ex ante contracted prices are lower (consumers bear the currency risk), but there is more ex post quantity variation.

❑ Under VCP – also depends on bilateral exchange rates with vehicle currency, and what the competition is doing. Mixed P and Q result.

The Canadian data support the observation that the extensive margin is active among French exporters.

I divided French exports into deciles by transaction size, 2002-2009. Looked at quarterly population of buckets and correlations with euro/CAD exchange rate.

Euro appreciations were associated with fewer small export transactions, and larger transaction shares for the largest exporter transactions rise.

Share corr with ER-1
Bottom 3 deciles: -0.40
Top 3 deciles: +0.21

Overall assessment (and next steps?) [1]

- **Very nice paper**. BMM argue that low export elasticities to ERs arise under heterogeneous firms since

  - Distribution costs in foreign markets reduce the exporter's value-added in imports, and therefore reduce trade price and quantity responses.

  - Fixed costs of entry constrain export participation to the higher productivity firms, who adjust markups more in response to demand fluctuations (prices, not quantities, respond to ERs). Entry and exit occurs with ERs.

- Modeling assumptions may overstate the role of these types of costs in limiting export quantity responses to exchange rates.

  - Is it really the fixed costs and distribution costs that matter, or differential reliance on imported inputs and integrated production?

Overall assessment (and next steps?) [2]

- Strongest contribution of paper is in the empirics, where the key predictions about exit, entry, and P / Q elasticities are confirmed by the data on French exporters.

  - Need more on timing issues and pricing rigidities as next steps

- Results that divide the exporters by distribution margins are indicative, but not conclusive.

  - High distribution margin firms may be those which have greater wholesale and retail costs. These may also be more differentiated products, with higher substitution elasticities, or firms that have more integrated production.

- Want to see more focus on the strengths of the posited reasons for "elasticity pessimism" pitted against competing explanations.