Discussion of “Asymmetries and Non-Linearities in Exchange Rate Pass-Through”

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Summary

- **Motivation:**
  - nominal exchange rates are important drivers of domestic inflation

- **Question:**
  - how homogeneous is exchange rate pass-through to import prices?

- **This paper:** empirical analysis using detailed micro-data on import prices in the US

- **Novel results:**
  - foreign currency appreciations pass-through more than depreciations
    - more pronounced for consumer goods
  - results not driven by price stickiness nor product exit

- Interesting contribution to an important agenda
Discussion

1. Summary of results

2. Discussion of empirical findings

3. Suggestion for model analysis
Some context in the literature

- Extent of pass-through depends on pricing model

- **Producer currency pricing (PCP)**
  - exporters preset prices in their own currency
  - full pass-through and LOP holds

- **Local currency pricing (LCP)**
  - prices set in currency of destination country
  - zero pass-through and LOP fails

- Evidence in the US:
  - 90% of imports and 97% of exports priced in dollars
  - median price duration in currency of pricing \(\sim 11\) months
Contribution: empirical evidence

- Data: product-level US import prices at the dock 1994-2014

\[ \Delta p_{i,j,t} = \sum_{k=0}^{18} \left\{ \beta^+_k \Delta e_{j,t-k}^+ + \beta^-_k \Delta e_{j,t-k}^- \right\} + \gamma \Delta P_{j,t} + \alpha_t + s_j + \epsilon_{i,j,t} \]

- **Result 1**: foreign currency appreciations pass through more quickly and completely than depreciations

  - result stronger for differentiated goods

- **Result 2**: asymmetry not driven by nominal rigidities nor product exit

- **Result 3**: no evidence in favor of non-linear pass-through
Contribution: theory

- Model featuring
  1. strategic complementarities
  2. menu cost of price adjustment
  3. convex adjustment cost to increasing output

generates asymmetry observed in the data

- depreciation of LC $\Rightarrow$ mg. cost in FC ↓ $\Rightarrow$ export price ↓
- induced increase in demand increases mg. cost due to convex costs
- price decrease is dampened
- mechanism only present for depreciation of LC
Source of asymmetry

- Heterogeneous pass-through by currency (Gopinath, et al. (2010))

- Heterogeneous medium-run pass-through by exporting country
  - from 0.01 to 0.46
Heterogeneous asymmetry

- Decomposition of the aggregate asymmetry to shed light on its source
  - is it currency-dependent?
  - is it heterogeneous at the good/sector or country level?

\[
\Delta p_{i,j,t} = \sum_s \sum_{k=0}^{18} \left\{ \beta_{s,k}^+ \Delta e_{j,t-k}^+ + \beta_{s,k}^- \Delta e_{j,t-k}^- \right\} \\
+ \sum_{j} \sum_{k=0}^{18} \left\{ \beta_{j,k}^+ \Delta e_{j,t-k}^+ + \beta_{j,k}^- \Delta e_{j,t-k}^- \right\} + \gamma \Delta P_{j,t} + \alpha_t + s_j + \varepsilon_{i,j,t}
\]

- Asymmetry not caused by nominal rigidities, what about real rigidities?
  - estimate “lifelong pass-through” by allowing for several rounds of price adjustments
Asymmetric exchange rates

What if exchange rates themselves behave asymmetrically?

\[ e_{j,t+h} - e_{j,t-1} = \beta^+_h \Delta e_{j,t}^+ + \beta^-_h \Delta e_{j,t}^- + \ldots \]

Figure 1: IRF to Exchange Rate Appreciation and Depreciation

FC appreciation is expected to be followed by further appreciations (although standard errors are large)
The Role of China

- Imports from China account for 21.2% of overall US imports

- Explore cross-country heterogeneity
  - estimated asymm. pass-through vs deviations from random walk for $e$
Comments about model

Empirical

- Model results rely upon increasing mg. costs for higher output
  - does asymmetry vanish when the economy has slack capacity?
  - is it less severe in industries with “constant” mg. costs (e.g. capital intensive)?

Quantitative

- Does model with asymmetric process for $e$ generate asymmetric PT?
- Analyze implications of model with asymmetric and persistent process for $\Delta e$
  \[
  \Delta e_t = \rho^+ \Delta e_{t-1}^+ + \rho^- \Delta e_{t-1}^- + \varepsilon_t
  \]
- How to explain differences in asymmetry across groups of products?
Conclusion

- Important new evidence on exchange rate pass-through

- Main contribution:
  - foreign currency appreciations pass-through more than depreciations

- What is the source of this asymmetry?
  - further decomposition by sectors, countries and currencies
  - role of exchange rate expectations?