Discussion of “Importers, Exporters, and Exchange Rate Disconnect” by Mary Amiti, Oleg Itskhoki, and Jozef Konings
Dallas Fed and Swiss National Bank Conference

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Great Paper!

- Link firm data to imports by source and exports by destination → share of imported inputs affects exchange rate pass-through to export prices
- Combine models of oligopolistic competition (Atkeson and Burstein (2008)) and endogenous choice of imported intermediate inputs (Halpern, Koren and Szeidl (2011))
- Theory and data imply high market share exporters also have higher share of imported inputs → both channels contribute equally to lower pass-through for large exporters
- Dominance of large exporters can explain low aggregate pass-through
Theory

- Oligopoly pricing: \( p_i = \frac{\sigma_i(S_i)}{\sigma_i(S_i) - 1} MC_i \) (\( MC_i \) in foreign currency)

- Pass-through of common cost-shifter \( \epsilon \): \[ \frac{\partial p}{\partial \epsilon} \epsilon = \frac{1}{1 + \Gamma(S_i)} \frac{\partial MC_i}{\partial \epsilon} \frac{\epsilon}{\nu_i} \]

- Cost-shifter could be exchange rate, input/commodity price, wage rate, tax, etc.

- \( \Gamma(S_i) \) related to markup elasticity, rising in \( S_i \) for Atkeson and Burstein (2008) so high \( S_i \) \( \rightarrow \) low pass-through of \( MC \)

- \( \nu_i \): MC sensitivity to cost-shifter could vary with firm size/market share (\( S_i \))
  - Composition of inputs: imports, wages, materials, intangible/hard to measure marginal costs (distribution, marketing, inventories, capital)
  - Input sourcing: monopsony power, direct purchase from manufacturer vs. through wholesaler/distributor or retailer, long-term contracts

**General insight:** \( \text{cov}(S_i, \nu_i) \neq 0 \) confounds inference on market power and pass-through
Big exporters and importers

- Euro depreciation raises MC denominated in foreign currency and hence price
- MC sensitivity is lower when $\rho_f$, the share of imported intermediate inputs, is higher
- Source matters: Euro-zone imports close to domestic inputs with respect to $\epsilon$, destination country inputs unaffected by $\epsilon$ (ideal hedge), other countries intermediate

**Specific insight:** $\text{cov}(S_f, \rho_f) > 0$ when imported inputs have cost-advantage (CES) but importer fixed cost per variety (Halpern, Koren and Szeidl (2011)).

Two channels reinforce each other to lower exchange-rate pass-through for large firms.
Production Cobb-Douglas in materials and labor:
\[ Y_i = \Omega_i X_i^\phi L_i^{1-\phi} \]

Materials Cobb-Douglas in input types:
\[ X_i = \exp \left\{ \int_0^1 \gamma_j \ln X_{i,j} \, dj \right\} \]

Types CES in foreign and domestic varieties
\[ X_{i,j} = \left( Z_i^{\zeta/(1+\zeta)} + a_j^{1/(1+\zeta)} M_i^{\zeta/(1+\zeta)} \right)^{(1+\zeta)}/\zeta \]

Materials share of variable costs (\( \phi \)) should be constant across firms in a (HS4) sector, but \( \rho_f \) (imported share of variable costs) varies by firm.
Table: Table 2 in shares

<table>
<thead>
<tr>
<th></th>
<th>Exporter</th>
<th></th>
<th>Non-exporter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High $\rho_f$</td>
<td>Low $\rho_f$</td>
<td></td>
</tr>
<tr>
<td>Wages</td>
<td>0.113</td>
<td>0.144</td>
<td>0.194</td>
</tr>
<tr>
<td>Total materials</td>
<td>0.887</td>
<td>0.856</td>
<td>0.806</td>
</tr>
<tr>
<td>Domestic materials</td>
<td>0.463</td>
<td>0.650</td>
<td></td>
</tr>
<tr>
<td>Non-Euro imp. materials</td>
<td>0.179</td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td>Euro-zone imp. materials</td>
<td>0.245</td>
<td>0.191</td>
<td></td>
</tr>
</tbody>
</table>
Imported Input Shares

Interpretation:

- Consistent with elasticity of materials/labor $> 1$ (small firms with higher material cost use more labor) or non-homothetic production technology
- Table 4: material cost strongest correlate of non-Euro import intensity in firm cross-section
- Materials share must vary a lot by sector; does it vary within sector like $\rho_f$? (cannot tell from Tables 2 and 4)

Why this might matter:

- Domestic wage (in foreign currency) most sensitive to exchange rate shock; energy, raw materials, manufactured inputs (both imported and domestic) may be less responsive
- Robustness Table 7 (“Euro import intensity” placebo) and Table 8 (control for interaction of employment or TFP with exchange rate) help
- Is $\rho_f$ the main factor driving this lower sensitivity of marginal costs or is it material costs? Could this explain why $\rho_f$ remains significant even when including $\Delta mc$ and $S$ in Table 5?

Suggestion: include interaction with firm materials share as control (for 75% sub-sample where this is reported)
Main difference between high and low $\rho_i$ firms is “domestic” materials vs. “non-Euro” materials (not “Euro” imported materials)

Not in the model, but consistent with higher importer fixed costs for non-Euro imports than Euro imports

Wholesale importers: a way around importer fixed costs?

Wholesale firms: 40% of exporter observations (dropped from main analysis)

Authors discuss measurement error in $\rho_f$ and consequent attenuation bias

Convert Euro but especially non-Euro imports to “domestic” materials, cover fixed costs but add markups and other (marginal?) costs

Interpretation: is non-Euro import share effect really about vertical structure and “mode of importation”?

Quantitative importance: assess using these data or domestic production data

Model: market structure on import/input side (wholesaler=fixed import cost plus markup?)
Two channels of $\rho_f$ are:

1. Sensitivity of import prices to exchange rate (import pass-through)
2. Correlation of export destination and import source exchange rates

Paper does this at the country level. Can do better?

- **Estimate pass-through into imported input prices by firm to get at monopsony power and long-term contracts**
- Firm variation in level of input prices for similar items might help with interpretation (“importer fixed cost” in the model = “quantity discount”?)
While average pass-through is quite high (80%)

- Bilateral exchange-rates plus sector-destination FE plus time FE give $R^2 = 0.057$
- Adding $\rho_f$, $S_f,s,k,t$ and $\Delta mc_{f,t}$ raises this to $R^2 = 0.062$
- Much more variation explained by sector-destination-time ($R^2 = 0.344$) or firm-product-year plus destination ($R^2 = 0.487$) FE

General finding in literature: market structure variables only explain small fraction of variation in product/firm pass-through

- How much of pass-through variation is explained by $\rho$ and $S$ within vs. across sectors?
- **Allow pass-through to vary by sector, so only variation in $\rho_f$ within sector drives differential pass-through**
- **Disaggregate by sector: heterogeneity in effect of $\rho$ and $S$?**
Minor comments

- Is \( \rho_i \) a sufficient statistic? Do different margins of \( \rho_i \) matter (decomposition by number of types, number of countries per type, quantity per country per type)?
- What do the value cutoffs (for firms? import/export transactions?) do in terms of measurement error?
- Can use product and firm destination-sector-period market shares? Does destination market share matter controlling for firm (total export) market share (e.g. independent variation across markets)?
- Do intra-firm imports play any role in exchange-rate sensitivity?