International Menu Costs and Price Dynamics

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Question

Do pricing decisions compare between domestic and export markets?

Compare price change behavior across markets:

1. Frequency
2. Size
3. Timing (synchronization)
Empirical Facts
(Matched Firm Data)

• Frequency:
  – Domestic prices change twice as frequently as export prices

• Synchronization
  – Unconditional average of Pr(sync) = 45%
  – Much lower for unmatched comparison

• Size
  – Export price changes are 2.5 times larger than domestic price changes
Facts are **very** robust

- **Economist newspaper data**
  - Number of price spells:
    - UK = 15
    - US = 3
    - Next closest country: South Africa = 8

- **Matched firm data**
  - Selection of firms into exporting doesn’t bias measurements of full data sample
  - Neither does selection of products within firms
  - Exception: synchronization was higher in matched firm data
Dynamic Firm Pricing Model

- Firms sell to domestic market and foreign market
- Relates pricing dynamics to economic conditions
- Menu cost is specific to the market
- Predictions:

<table>
<thead>
<tr>
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<th>Pr(Increase)</th>
<th>Pr(Decrease)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Productivity</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Aggregate Demand</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>

- Higher correlation of shocks causes increase in synchronization
Regression Analysis

• Economic fundamentals affect probability of adjustment as predicted

• Synchronization is related as predicted:
  – Productivity
  – Correlation of output growth
  – Correlation of inflation
    • Can we tell if they are separate effects in the data?
Menu Cost Estimates

• Domestic Menu cost estimate: 0.4% of period steady state revenues
• Uniform export menu cost: 2%
• Country specific menu costs range: 0.25% and 6.0%
  – Tighter range when conditioning on price change only
Alternative explanations for stickier export prices

1. Differences in factor demand volatility
2. Risk sharing between supply chain participants
3. Differences in market structure
1) Smoother factor demands

• Transport increases gap between intermediate purchase and final purchase
• May have the effect of smoothing demand
• “Spot price” vs. expectation of future spot price
• Consistent with the finding that menu cost parameter increases with geographic distance
2) Vertical Risk Sharing

- International transactions are riskier
- Smoother prices as a way to share risk between firms within a supply chain
- Do importers value less frequent price changes?
  - Do exporters accept less frequent price changes in exchange for higher average markups?
- Retail prices are more volatile than acquisition cost (Eichenbaum, Jaimovich, and Rebelo, *Forthcoming*)
3) Differences in Market Structure

• Do firms have more market power with their export customers than domestic customers?
• More concentrated markets experience fewer price changes (surveyed by Carlton 1989)
Are Product Characteristics Informative?

• Finished goods vs. intermediate goods
• Sensitivity to raw material prices
  – Are large changes passed through to price symmetrically?
  – Contract escalators
• Complex products
  – Proportionately more expensive to re-negotiate?
What about the export markets with menu costs ≈ domestic?

• Which countries?
  – How large
  – Composition of goods exported

• How do export market menu costs compare to associated domestic estimates of menu cost?
Concluding Remarks

• Thoroughly convinced of the facts
• Generates many new questions!
  – Does the excess stickiness pass through to the final price?
  – Do export menu cost differentials depend on product characteristics?
  – Are contract escalators used in export agreements?
    • If not, why not
    • If so, why does excess stickiness remain?
• Fertile grounds for the “just ask” or “Alan Blinder” approach to studying price stickiness