Discussion of “Microeconomic Uncertainty, International Trade and Aggregate Fluctuations”

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Background

- The dispersion of many macro series is countercyclical
  - TFP growth/levels, price changes, sales growth, employment growth

- The dominant view is that this dispersion is evidence that shocks are more dispersed in recessions (2nd moment shocks)
  - Bloom (2009), Bloom et al. (2013), Arellano et al. (2012), Bachmann and Bayer (2012), Gilchrest et al. (2012)

- Alternative view: dispersion arises endogenously in response to a first moment shock
  - Bachmann and Moscarini (2012), Berger and Vavra (2014), Decker et al. (2014)
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Roadmap

- Briefly review the core theoretical results of the paper
- Focus on how first and second moment shocks effect the standard deviation of sales growth of home producers
  - $\ln(sales(i)) = p_H(i)y_H(i) + p^*_H(i)y^*_H(i)$
  - This measure of dispersion is closest to what is in Bloom’s manufacturing uncertainty database
  - The model results don’t strongly rely on the negative preference shock (as they do for variance in expenditures)
- Discuss corroborating empirical evidence
- Some final thoughts
How trade impacts the dispersion of sales growth

In response to shocks, exporter status changes which effects the dispersion of shipments:

- $g_{stoppers} < g_{continuing,nonX} < g_{continuing,X} < g_{starters}$
Effect of a negative productivity shock

- There is a negative productivity shock in the home county
- First, keep export status fixed (intensive margin)
- Home goods become more expensive raising costs for home producers
- Exporting option => effect of the shock is not symmetric:
  - Sales growth for non-exporters falls by more than for exporters since export sales don’t change much
  - This causes an increase in the dispersion of sales growth
Intensive margin effect
Extensive margin

- Composition of exporters/non-exporters also changes in response to a negative productivity shock
- Since exporting is like capital, firms reallocate investment from producing for the home market to producing for the foreign market
  - There is an increase in starters: home producers who start exporting (increases dispersion)
  - There is a reduction in stoppers: home exporters who stop exporting (lowers dispersion)
- On net, there is net entry into exporting so dispersion rises
- A -5% TFP shock implies a 2.5% increase in sales dispersion
  - Quantitatively relevant?
Effect of a second moment shock

- Consider a shock which temporarily increases $\sigma_\epsilon$
  - This increases increase the dispersion of possible productivity draws (duh!)

- We know from static trade models (e.g. Melitz):
  - Sales are increasing and convex in productivity: possibility of selling to a world market increases the return to being very productive

- So generically, exports will rise a lot in response to an uncertainty shock

- In fact, even more striking:
  - Small fraction of home producers export a lot (increasing exports)
  - Their labor demand rages home wages crowding out less productive exporters causing a fall in exporters

- By contrast, output doesn’t change much (actually decreases a little)
Second moment shocks

- Increase in second moment shocks:
  - big increase in dispersion
  - big increase in exports
  - not much on output

- If second moment shocks are countercyclical, model implies exports should increase during recessions
Nice observation

Seems robust since exporting option seems to often convexify sales in trade models

Caveat: a little unfair to second moment shocks since exports also rise on impact to a negative home productivity shock
Empirical evidence

- Use Bloom’s uncertainty database
- Dispersion in sales growth across 450+ manufacturing industries
- 4 digit level
- 1989-2009
- Idea:
  - related changes in sales volatility with measures of international reallocations ($\Delta RER, \Delta NX$)
Time-series evidence

Empirical specification: \( \text{logsalesgrowth}_{j,t} = \beta X_t + \delta t + \epsilon_{j,t} \)

- includes sector fixed effects

Table 2: Industry-level Dispersion and Aggregate Reallocation (1989 - 2011)

<table>
<thead>
<tr>
<th></th>
<th>GDP Growth</th>
<th>( \Delta \text{RER} )</th>
<th>( \Delta \text{Net Exports} )</th>
<th>All 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Growth</td>
<td>-0.005***</td>
<td>.</td>
<td>.</td>
<td>-0.005***</td>
</tr>
<tr>
<td></td>
<td>0.002</td>
<td>.</td>
<td>.</td>
<td>0.002</td>
</tr>
<tr>
<td>( \Delta \text{RER} )</td>
<td></td>
<td>0.265**</td>
<td>.</td>
<td>0.247**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.113</td>
<td>.</td>
<td>0.113</td>
</tr>
<tr>
<td>( \Delta \text{Net Exports} )</td>
<td>.</td>
<td>.</td>
<td>1.296***</td>
<td>0.841*</td>
</tr>
<tr>
<td></td>
<td>.</td>
<td>.</td>
<td>0.512</td>
<td>0.486</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
<td>0.61</td>
</tr>
<tr>
<td>Observations</td>
<td>5088</td>
<td>5088</td>
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</tbody>
</table>

Note: *, **, and *** denote significance at 10, 5, and 1 percent levels, respectively. Standard errors are below each coefficient and are clustered by industry.
Results are statistically significant

Are they economic significant?

I re-ran results after standardizing $\Delta \text{RER}$ and $\Delta \text{NX}$

- New coefficients: 0.0052 & 0.0040 respectively
- Standard deviation of uncertainty measure is 0.25
- So these variables explain 4% of a std increase in sales dispersion?
- Big?

Auto evidence more compelling
Conclusion

- Really interesting paper: throws some cold water on second moment shocks
- I liked the mechanism: result that second moment shocks primarily reflect trade flows seems robust
- Not entirely convinced of quantitative relevance but empirical results are definitely consistent with the theory
- Would be interesting to investigate interaction between uncertainty shocks and durables/capital goods
  - subject to fixed costs and large portion of trade
- Large scope for using international context to investigate source of countercyclical dispersion
  - bigger shocks?
  - endogenous response to first moment shocks?
- Thanks!