Taking Stock of Trade Policy Uncertainty: Evidence from China's Pre-WTO Accession

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July 2020

Disclaimer

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Contribution

- Famous example of annual votes in U.S. Congress on renewal of China's MFN status in 1990s
- Often used as example of uncertainty about trade policy

This paper:

- Shows *intra*-year dynamics of imports plausibly related to timing of these votes
- Dynamics vary with "storability" of product
- Uses intra-year dynamics & calibrated inventory model to back out implied probability of MFN non-renewal

Model

- Demand by importer j for imported good z is volatile

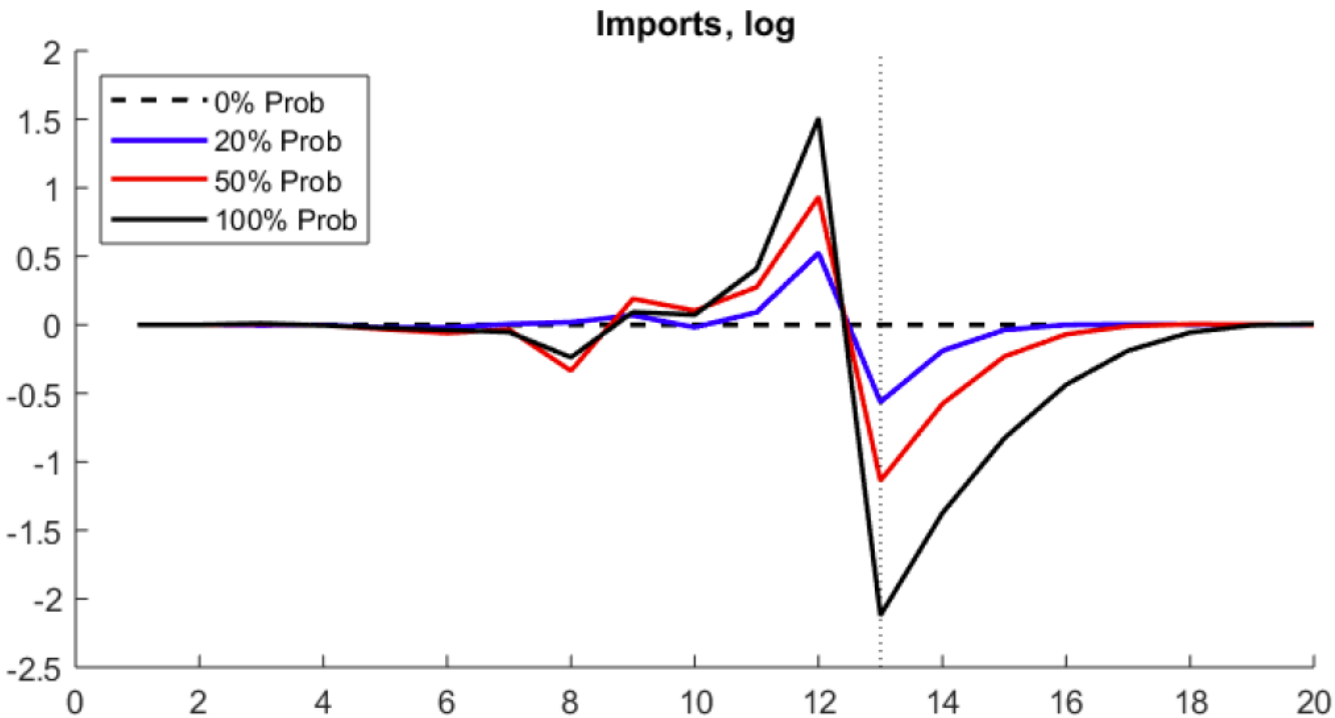
$$c_{jzt} = \exp(\nu_{jzt})\, p_{jzt}^{-\sigma} \text{ with } \nu_{jzt} \overset{iid}{\sim} N\left(0, \sigma_\nu^2\right)$$

- Importer faces fixed and variable costs f, $\omega(1+\tau_{zt})$
- 1-period delivery lag, imports irreversible
- Inventories, goods in transit depreciate at rate δ_z
- Importers discount future at rate $1/(1+r)$
- Tariffs: 1st-order Markov, $\tau_{zt} \in \left\{\tau_z^L, \tau_z^H\right\}$, transition matrix

$$\Pi_{zt} = \begin{bmatrix} 1-\pi & \pi \\ 0 & 1 \end{bmatrix} \text{ if Congress votes at } t+1, \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} \text{ o/wise}$$

Model import response

Figure 1: Import Response to Different Probabilities of a Tariff Hike

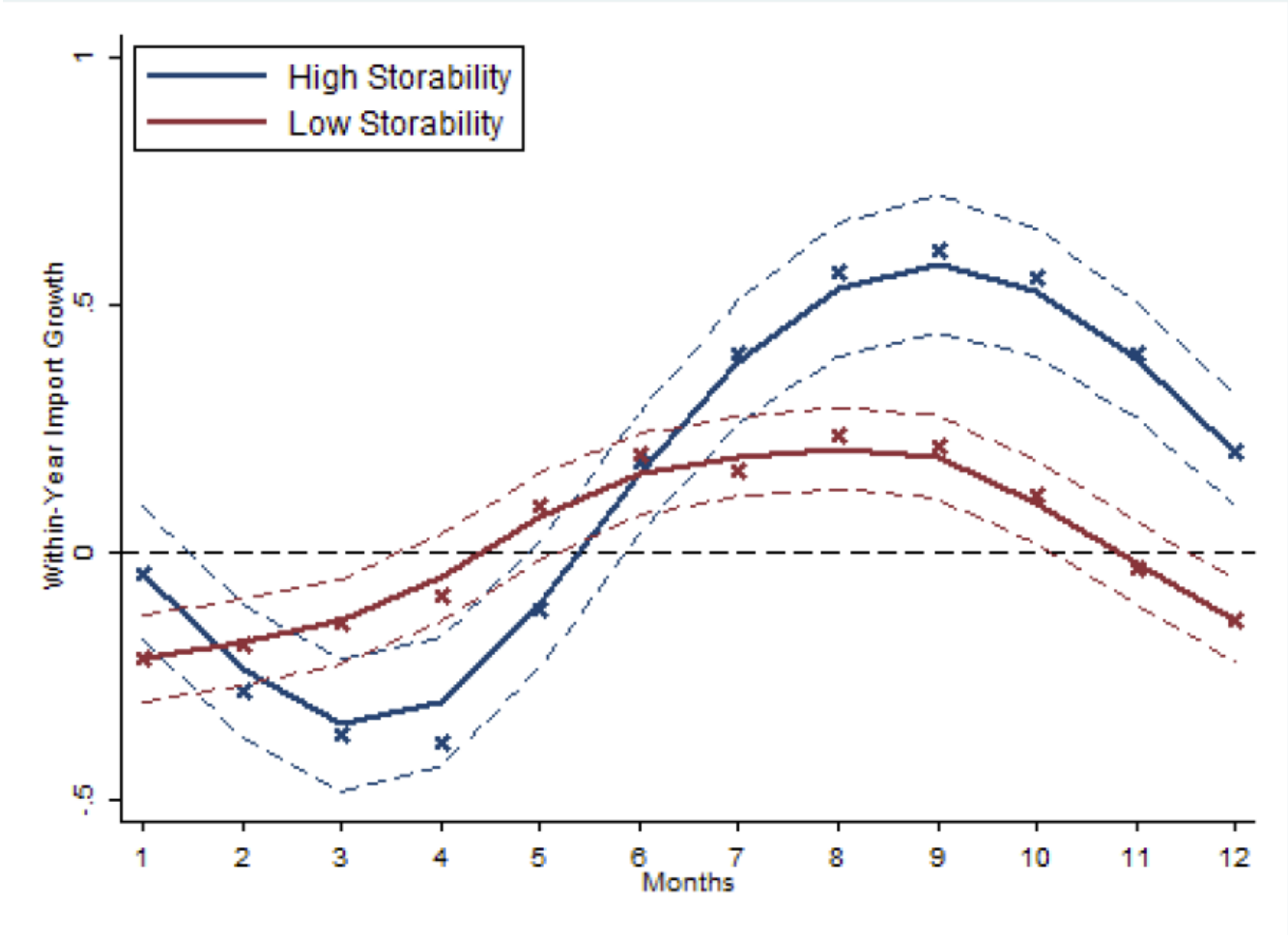


Data exercise

- How sensitive is seasonal pattern of U.S. imports from China to gap between Smoot-Hawley, MFN tariffs?
- Use seasonal pattern of U.S. imports from ROW, EC imports from China to control for non-trade-policy factors
- Find: seasonal pattern sensitive to tariff gap
- Sensitivity greater for "lumpier" products

Data import response

Figure 9: High vs. Low Storable Good



Comment 1: Empirical specification

- Some small suggestions:

1. For clarity, calculate deviations relative to reference period
2. If months are pooled, use quarterly not monthly obs
3. Alternative: don't pool months (issue of zeros)

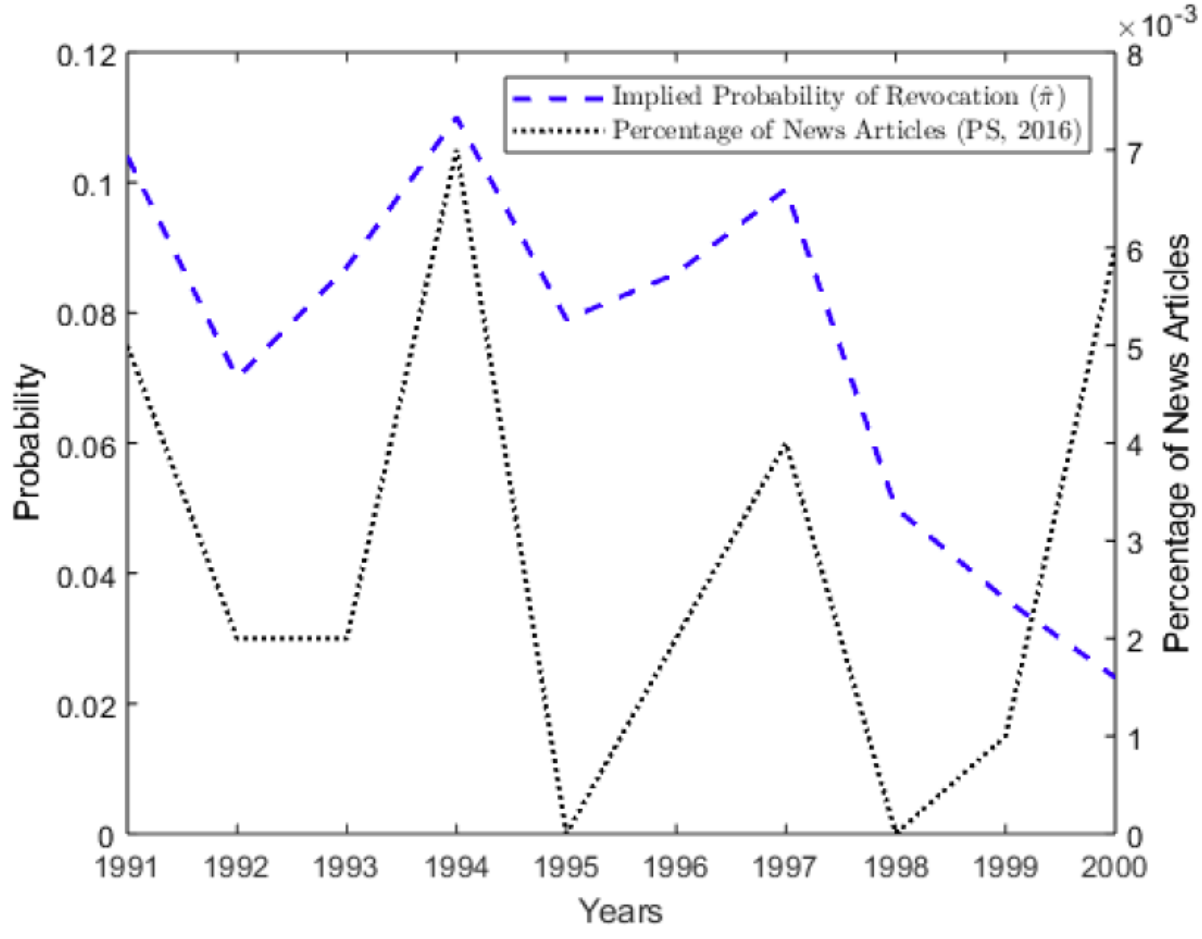
Backing out probability of non-renewal

- Calibrated model: Set r, $\{\sigma, \omega, f\}$, σ_v^2,
- Create bins of products using $\tau_z^H - \tau_z^L$
- Pick δ_z for each bin to match lumpiness of imports
- Pool across bins, estimate same regression in model as in data

- Choose π to match peak import response to tariff gap

Probability estimates

Figure 10: Estimated Annual Probabilities of Revoked Access to MFN Rates



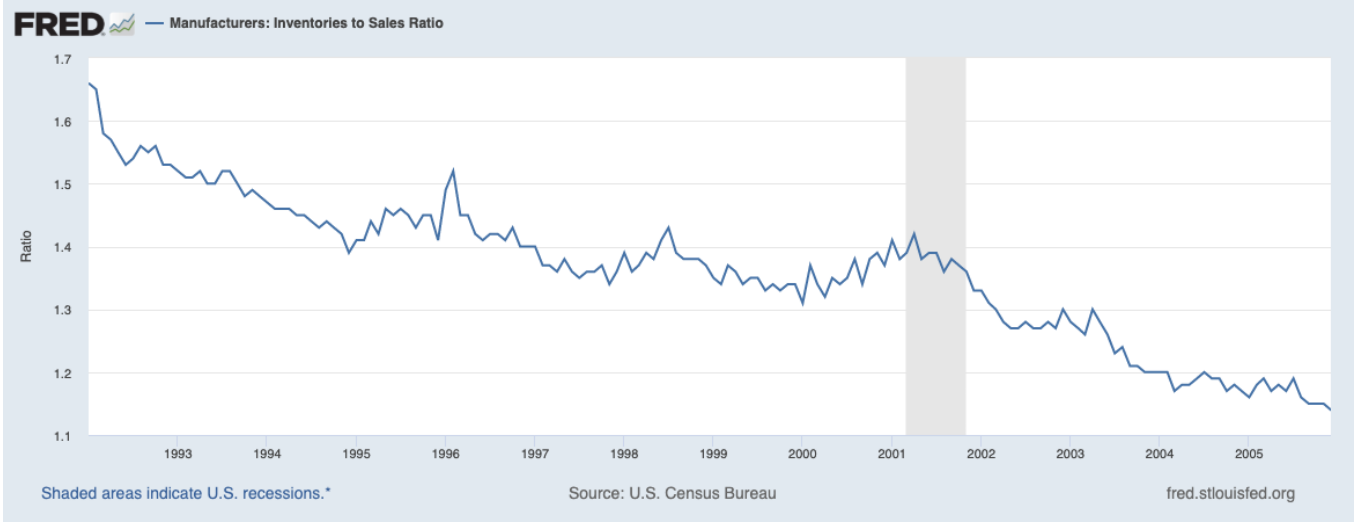
Comment 2: Estimation strategy

- Data has richness that could be exploited further
- Example: try to match peaks for lumpy vs non-lumpy products
- Or use this as a non-targeted moment

Comment 3: Robustness

- How robust are estimates to different parameters?
- Are there trends in δ_z, f?

Figure: U.S. Manufacturing Inventory-Sales Ratio 1992-2005



- Could this play a role in time-varying probability estimates?

Comment 4: Big picture

- This paper: probability of MFN non-renewal quite low (6%)
- What does this suggest about key elasticities / frictions given evidence for large trade response to WTO accession?

- Shift focus from ad valorem tariffs to other types of barrier
- Did China joining WTO lead to lower f through faster customs clearance / less intensive searches?

- Heise, Pierce, Schaur & Schott (2017): in LFTTD data, shipments from China more frequent after WTO accession