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PREFERENTIAL TRADE AGREEMENTS AS STUMBLING BLOCKS FOR MULTILATERAL TRADE LIBERALIZATION: EVIDENCE FOR THE US*

*by Nuno Limao
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1 INTRODUCTION

- Limão (2005) provides the first systematic evidence that the US’s PTAs were a stumbling block to its multilateral liberalization.
- Evidence of reciprocity --- amplifies the stumbling block effect.
- Agreements with countries that are small, can generate a stumbling block effect.
1 INTRODUCTION...

- Stumbling block ---- Stronger for products
  - exported under PTAs or
  - constitute relatively larger shares of a given PTA’s exports to the US
FIGURE 1: REDUCTIONS IN US AVERAGE MFN TARIFF FACTORS IN URUGUAY ROUND BY SECTOR (%)
2 THEORETICAL PREDICTION AND PRELIMINARY EVIDENCE

- Limão (2002):
  - Two symmetric regional blocs,
    - each contain--- Large and Small.
  - Two externalities
    - a public good with regional spillovers
      - For Small--no weight
      - For Large—under provision
    - Terms-of-trade externality
      - Large can depress the price of Small's exports by tariff increase
      - PTA, Large lowers its tariffs on Small's exports for an increase in the public good

- PTA impacts multilateral tariffs
2 THEORETICAL...
STUMBLING BLOCK EFFECT

- Zero Tariffs on Small’s export
  - Large can’t offer a PTA tariff reduction
- Raise multilateral tariff
  - Large gains
    - Offers preference to Small
    - More regional Public Good.
3 US PTAs and Uruguay Round

  - NAFTA --- 12% of total U.S. imports (1994)
  - Other PTAs--- 3% for the GSP and less than 0.4% for Israel, as well as for the ATPA and the CBI
- PTAs unlikely to have a large direct effect on the aggregate U.S. trade with ROW (except NAFTA, or the GSP)
3 US PTAs ...

- Small PTAs ---- still significant effect on the U.S. MFN tariff
  - Few products in which the GSP, CBI, ATPA and Israel have large shares. US also imports form non-PTA partners
  - U.S. places sufficient weight on the concessions that the partner provides
- The potential to affect a large number of non-PTA countries and consequently a non-negligible amount of U.S. trade
3.2 **Uruguay Round Negotiations**

- Negotiations started in 1986, in July 1993 significant progress, implementation started in 1995
- A multilateral trade round --- model empirically
- Little empirical evidence ---on reciprocity
- Reciprocity--- applies to other WTO members
  - Amplifies the importance of PTAs as stumbling blocks.
  - U.S. offered smaller tariff reductions in PTA goods
- The combination of the stumbling block effect, reciprocity and MFN
  - Can affect third countries even if they do not trade directly with the U.S.
4 Empirical model of the U.S. MFN tariff ---

\[(E1) \quad \tau_{it} = \phi G_i z_T + \phi_2 z_T + \phi_3 G_i + \alpha_i + \alpha_t + \alpha_{lt}
+ \beta(b_t - b_t^k)l_i^k + (-\rho m a_t^k)l_i^k + \epsilon_{it}\]

\[i = 1, \ldots, N; \quad t = 1, 2\]
4.1 Reciprocity and Bargaining in Trade Negotiations

\[(E2) \quad \Delta \tau_{it} = \phi G_i + \phi_2 + \Delta \alpha_t + \Delta \alpha_{It} + \beta \Delta (b_t - b_t^k) 1_i^k + (-\rho \Delta m \alpha_t^k) 1_i^k + \Delta \varepsilon_{it} \]

\[i = 1, \ldots, N\]
Using the market access definition and writing (E2) in terms of estimable coefficients we have:

\[(E3) \quad \Delta \tau_{it} = \phi G_i + a + a_I + \beta \Delta (b_i - b_{i}^k) 1_i^k \\
+ \rho (\sum_j \Delta \tau_{jt}^k w_{jt}^k) 1_i^k + u_i \]

\[i = 1, \ldots, N\]
4.1 Reciprocity and Bargaining in Trade Negotiations ...

- Limão estimates (E4) to test the basic predictions

\[
\Delta \tau_{it} = \phi G_i + a + a_t + \beta \sum_k s_{iT}^k \Delta(b_t - b_t^k) \\
+ \rho \sum k s_{iT}^k (\sum j \Delta \tau_{jt}^k w_{jt}^k) + u_i \quad i = 1, \ldots, N
\]
4.2 **Endogeneity**

- Potential endogeneity problems in (E4)
  - Reciprocity and PTA variables
- Endogeneity of the reciprocity variable
  - Due to reverse causation
    - A fraction of country $k$ ’s tariff reductions in the UR would be due to reductions in U.S. tariffs on $k$ ’s products
- Limão also instruments PTA variable $G_i$
4.2 **Endogeneity ... Instruments**

- **The list of instruments**
  - whether the PTA partners exported the good to the U.S. before UR independently of whether the preference is received or not

- **To test the exogeneity of exports as an instrument**
  - includes other instruments e.g. transport costs and world price changes prior to the UR
    - a priori more likely to be exogenous relative to UR tariff changes
## 5 Estimation – Data Description

<table>
<thead>
<tr>
<th>Name</th>
<th>Model (E4)</th>
<th>Data/description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USLIB</td>
<td>$\Delta \tau_{it}$</td>
<td>$\ln(1+\tau_{it}) - \ln(1+\tau_{it-1}); \tau_{it}$: U.S. Ad valorem bound rate (post-UR). $\tau_{it-1}$: U.S. Ad valorem base rate (pre-UR)</td>
</tr>
<tr>
<td>ANYPTA</td>
<td>$G_i$</td>
<td>=1, if exported to US under any PTA before UR implemented (1994)</td>
</tr>
<tr>
<td>$s_{iT}^k$</td>
<td></td>
<td>Partner $k$’s export share of top 5 exporters of $i$ to U.S.</td>
</tr>
<tr>
<td>BARPOW</td>
<td>$\Sigma_k s_{iT}^k \Delta (b_t - b_{kt})$</td>
<td>$\Sigma_k s_{iT}^k \Delta (\ln\text{GDP}^{U.S.}_t - \ln\text{GDP}_t^k)$</td>
</tr>
<tr>
<td>TOTLIB</td>
<td>$\Sigma_k s_{iT}^k \Sigma_j \Delta \tau_{jt}^k w_{jt}^k$</td>
<td>$\Sigma_k s_{iT}^k (\Sigma_j \Delta \tau_{jt}^k w_{jt}^k)$</td>
</tr>
<tr>
<td>UNILIB</td>
<td>$\Sigma_k s_{iT}^k (\Sigma_j \Delta \tau_{jt}^k - \Sigma_j \Delta \tau_{jt}^{rk}) w_{jt}^k$</td>
<td>$\Sigma_k s_{iT}^k (\Sigma_j \Delta \tau_{jt}^k - \Sigma_j \Delta \tau_{jt}^{rk}) w_{jt}^k$</td>
</tr>
<tr>
<td>$\Sigma_j \Delta \tau_{jt}^{rk}$</td>
<td>$w_{jt}^k$</td>
<td>where $\Delta \tau_{jt}^{rk} \equiv %$ change 95-92 $\sim \ln (\tau_{jt}^{k} / \tau_{jt}^{k} 92)$ $w_{jt}^k \equiv$ Share of good $j$ in $k$’s imports</td>
</tr>
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</tr>
</tbody>
</table>
5.2 Estimates

5.2.1 Stumbling block effects

- *Table 1* contains the results from estimating (E4)
- The first two columns
  - OLS estimates
- The remaining columns
  - Different specifications of GMM estimator and instrument for the endogenous variables, denoted by the symbol “†”
5.2 ESTIMATES --- TABLE 1

- The estimate for the coefficient on ANYPTA, \( \varphi \) in (E4), is positive and significant over the different specifications \( \Rightarrow \) Stumbling block effect
- Column 4 --- EVRPTA = 1 for goods exported under every PTA
  - Stumbling block effect is 60% larger
- Column 5 --- Stronger Stumbling block effect in products important for a PTA partner
  - The effect is 48% higher for important exports
5.2 Estimates --- Table 1...

- Are the Results biased due to NAFTA effects or PTAs with small countries are also Stumbling Blocks?
- Column 6 --- Limão separates NAFTA from the remaining agreements
  - The agreements with smaller countries also have a significant effect
- Column 7 --- Stumbling Block effect for each of the individual PTAs, (with the exception of Israel)
  - Even PTAs with small countries such as the ATPA and CBI affect a large country’s MFN tariffs
5.2.2 Multilateral negotiation effects --- Table 1...

- Bargaining power elasticity $\beta$ –
  - Positive, and significant
  - A 31% decrease in the U.S.’s bargaining power
  - Causes decrease of 0.28% in the U.S. MFN tariff
- Reciprocity effect $\rho$ -- Two important factors
  - Controlling for the existence of NTBs
  - Addressing its endogeneity
- The IV estimates of reciprocity $\rho$ --- Positive & Significant
  - Range from 0.014 to 0.018
  - Decrease in tariff of a U.S. partner that exports good $i$ leads to a decrease in the U.S. tariff of $i$
5.3 SPECIFICATION TESTS AND INSTRUMENT CHOICE

- The bottom rows of Table 1 present test statistics for the IV estimation.
- The first three columns in Table 2a present the first stage regressions for the potentially endogenous variables in basic specification in Table 1 (column 3): ANYPTA, reciprocity and its interaction with NTB.
- The last three columns in Table 2a present the first stage results for column 6 Table 1.
- Table 2b presents the first stage for the specification with the individual agreements.
5.4 Interpretation of Estimates as Price Effects

- The domestic price for a traded product subject to an ad valorem tariff $t$ can be written as

$$ (1) \quad \ln p^d_t = \ln (1 + \tau_t) + \ln p^w_t $$

- Define the pass-through rate from tariffs to domestic prices as

$$ (2) \quad \pi \equiv \frac{\Delta \ln p^d_t}{\Delta \ln (1 + \tau_t)} = 1 + \frac{\Delta \ln p^w_t}{\Delta \ln (1 + \tau_t)} $$
5.4 Interpretation of Estimates as Price Effects ...

- If there is full pass-through to domestic prices $\pi = 1$, then, the stumbling block parameter $\varphi$, represents the growth in the U.S. price for a PTA type good relative to a similar non-PTA good

\[
\Delta \ln p^d_{PTA_t} - \Delta \ln p^d_t = \Delta \ln (1 + \tau_{PTA_t}) - \Delta \ln (1 + \tau_t) = \phi
\]

where $x_{PTA_t}$ denotes the value of variable $x$ when the PTA variable, $G$, is one

- Alternatively, the ratio of the domestic price growth of a PTA good to a similar non-PTA good

\[
\Delta \ln p^d_{PTA_t} / \Delta \ln p^d_t = \Delta \ln (1 + \tau_{PTA_t}) / \Delta \ln (1 + \tau_t) = 1 + \phi / \tilde{a}
\]
5.4 Interpretation of Estimates as Price Effects ...

- When there is incomplete pass-through, i.e. $\pi < 1$
- Using (2) to write the world price as a function of the pass-through and tariff changes we obtain

\[
\Delta \ln p_t^w = (\pi - 1) \Delta \ln(1 + \tau_t)
\]
5.4 Interpretation of Estimates as Price Effects ...

- Using (5), we can write the ratio of the growth in the world price of a "benchmark" PTA vs. a non-PTA good as

\[
\frac{\Delta \ln p_{PTA}^w}{\Delta \ln p_t^w} = \left\{ \frac{\Delta \ln (1+\tau_{PTA})}{\Delta \ln (1+\tau_t)} \right\}^* (\pi_{PTA} - 1)/(\pi - 1) \\
\approx 1 + \phi/\tilde{\alpha} \text{ if } \pi_{PTA} \approx \pi < 1
\]

- The expression in (6) applies if there is imperfect pass-through i.e. \( \pi < 1 \)
5.5 Quantification

- In Table 3 Limão quantifies the stumbling block effects $\varphi$ ---
  - In terms of price effects and
  - In relation to the multilateral negotiation variables $\beta$, $\rho$

- First column of Table 3 (uses column 3 Table 1)
  - If we assume $\pi = 1$ then the U.S. domestic price of PTA goods increased by 1.28% relative to similar non-PTA goods
  - The reduction of the domestic price for the PTA good in the U.S. was only 52% of that experienced by the average non-PTA good

- Similarly, if $\pi < 1$ the increase in export price for a country that does not have a PTA with the U.S. but exports any of the PTA-type goods is only 52% of the price increase for a similar non-PTA good
5.5 QUANTIFICATION ...

- **Second column** --- (effect for the goods exported by every PTA).
  - The relative price growth is only 23% and that this estimate has a standard error of 13.
  - We can’t reject the hypothesis that the average relative price growth for the goods exported by every PTA was as low as zero.

- **Third Column** – (for important exports for any PTA)
  - The relative price growth is a mere 31%.

- **The last set of columns** (uses significant estimates for individual PTAs)
  - The strongest effect is for NAFTA with a 68% relative price growth, followed by GSP, 74%. The estimates for the ATPA and CBI are identical, 84%.
  - Can reject the hypothesis that the price effects for PTA and non-PTA goods are similar.
5.5 **Quantification ...**

- *Third Row*—Compares the importance of the PTAs relative to the reciprocity effect
  - A country that does not have a PTA with the U.S. but exports the same good as a PTA partner.
  - How much more this country must lower its average tariff in order to obtain the same average tariff reduction by the U.S. in that good as the one received by a country that exports a similar non-PTA good
- For the basic specification with any PTA the answer is 91% if that country has an export share close to one
5.5 Quantification ...

- *Fourth Row*: Statistic for the bargaining power variable similar to the one for reciprocity
  - A country’s GDP would have had to grow by 91% relative to the U.S. between the Tokyo and Uruguay rounds to overcome the effect from NAFTA, and over 40% to overcome the effect from either the ATPA or CBI

- These estimates provide evidence -- PTAs signed by the U.S. constituted a stumbling block towards its own MTL

- These PTAs may also have constituted a stumbling block for the MTL of other countries via reciprocity
5.6 Further Robustness

- Two additional tests:
  - Robustness to finer industry controls,
  - An alternative test of our hypothesis that attempts to capture whether there is an important missing variable bias in the estimation.

- Re-estimates ----
  - *Table 4* contains the results of re-estimating the IV specifications in *Table 1* with 4-digit industry dummies.

- The sign and significance of the PTA, bargaining and reciprocity variables are similar to those in *Table 1*, which were obtained using 2-digit industry dummies.
In the absence of a stumbling block effect

- Within any given industry and conditional on reciprocity and bargaining effects,
  - No systematic difference in the change in MFN tariffs for products exported by a given PTA and any given combination of one or more non-PTA countries
5.6.1 An Alternative Test ...

To test this hypothesis

- Include an additional control group, a country or combination of countries \( c \) that do not have a PTA with the U.S.

- Estimate the following equation for each combination \( c \):

\[
(E5) \quad \Delta \tau_{it} = \delta_c G_i + \eta_c G_{ic} + a_c + a_{cl} + \beta_c \sum_k s_{iT}^k \Delta(b_t - b_t^k) \\
+ \rho_c \sum_k s_{iT}^k \sum_j \Delta \tau_{jt}^k w_{jt}^k + u_{ic} \quad i = 1, \ldots, N
\]
5.6.1 An alternative test ...

- To compare with NAFTA
  - Construct all possible combinations of one and 2 countries,
  - Obtain 276 combinations and estimate (E5) for each using GMM and instrumenting as column 6 of Table 1

- Figure 3 plots the “smoothed” distribution
  - If there were no systematic differences then the distribution should be centered around zero
  - The majority of the estimates are positive and significant

- Test provides further support
  - U.S. did not reduce its MFN tariffs on products imported under NAFTA by as much as on other products not imported from its PTA partners.
Figure 3

PTA effect on tariff growth
Standardized difference of NAFTA and combinations of non-PTA countries
6 Conclusion

- This paper provides the first estimates to show that U.S. multilateral tariff reductions in PTA goods were smaller than those in similar goods not imported from PTA partners.

- On average an exporter to the U.S. that did not belong to one of its PTAs received about 52% the benefit (in terms of price increases) if it exported any PTA good instead of a similar non-PTA good.

- This effect is even stronger if the good was exported by all PTAs or was an important export for a PTA partner.
6 Conclusion ...

- The stumbling block effect is present even for agreements with small countries, which is important for two reasons.
  - First, there are many more PTAs that the U.S. can still sign with small countries.
  - Second, the PTAs with small countries affect products exported by other small developing countries to the U.S.

- These are countries relative to which the U.S. is likely to have market power and thus smaller reductions in the U.S. tariffs affects their export price adversely.
Thank you!