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

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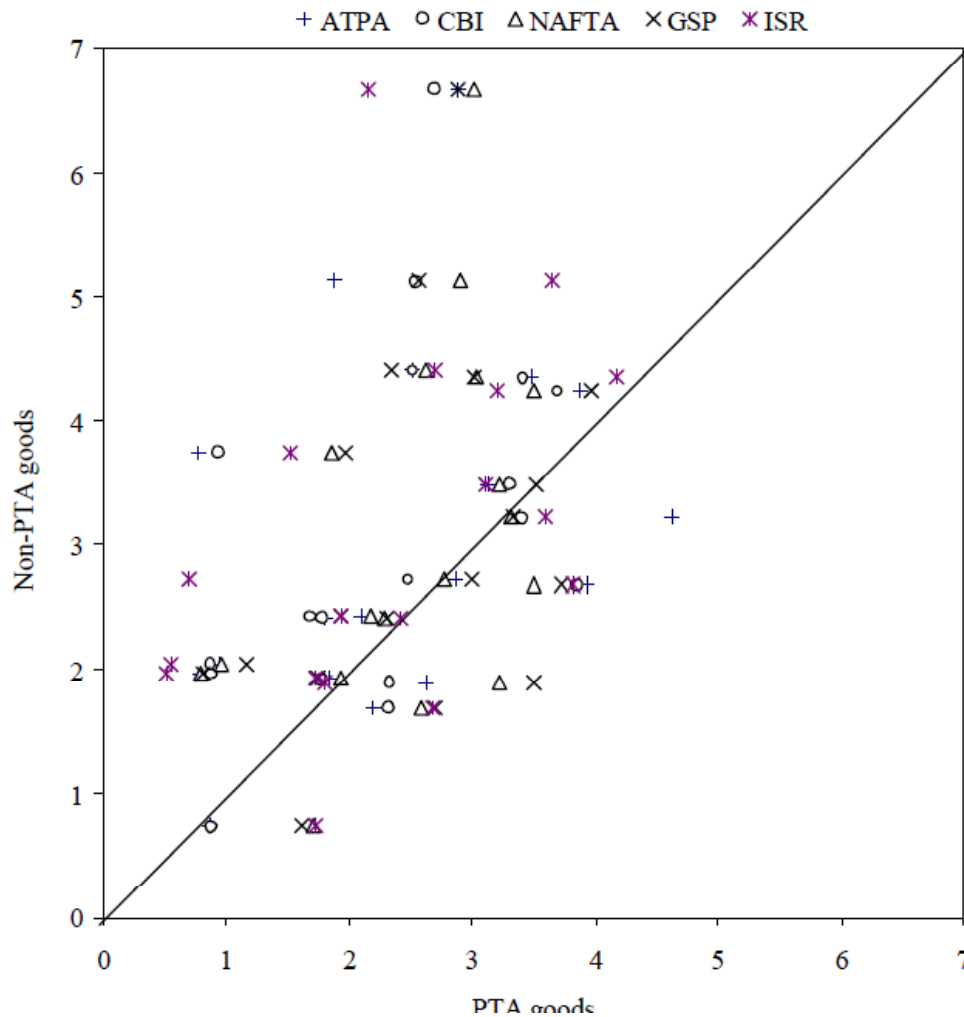
1 INTRODUCTION

- 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 (1994), Israel (1985), GSP (1976), Caribbean countries (CBI, 1984) Andean countries (ATPA, 1992)
 - 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 from 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

- Empirical model of the U.S. MFN tariff ---

$$\begin{aligned}
 (E1) \quad \tau_{it} = & \phi_1 G_i z_T + \phi_2 z_T + \phi_3 G_i + \alpha_i + \alpha_t + \alpha_{it} \\
 & + \beta(b_t - b_t^k) 1_i^k + (-\rho m a_t^k) 1_i^k + \varepsilon_{it} \\
 & i = 1, \dots, N; \quad t = 1, 2
 \end{aligned}$$

4.1 RECIPROCITY AND BARGAINING IN TRADE NEGOTIATIONS

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$$(E2) \quad \Delta\tau_{it} = \phi G_i + \phi_2 + \Delta\alpha_t + \Delta\alpha_{It} \\ + \beta\Delta(b_t - b_t^k)1_i^k + (-\rho\Delta ma_t^k)1_i^k + \Delta\varepsilon_{it} \\ i = 1, \dots, N$$

4.1 RECIPROCITY AND BARGAINING IN TRADE NEGOTIATIONS ...

- Using the market access definition and writing (E2) in terms of estimable coefficients we have:

$$\begin{aligned}
 (E3) \quad \Delta \tau_{it} &= \phi G_i + a + a_I + \beta \Delta (b_t - b_t^k) 1_i^k \\
 &\quad + \rho \left(\sum_j \Delta \tau_{jt}^k w_{jT}^k \right) 1_i^k + u_i \\
 &\quad \quad \quad i = 1, \dots, N
 \end{aligned}$$

4.1 RECIPROCITY AND BARGAINING IN TRADE NEGOTIATIONS ...

- Limão estimates (E4) to test the basic predictions

$$\begin{aligned}
 (E4) \quad \Delta \tau_{it} = & \phi G_i + a + a_l + \beta \sum_k s_{iT}^k \Delta(b_t - b_t^k) \\
 & + \rho \sum_k s_{iT}^k \left(\sum_j \Delta \tau_{jt}^k w_{jT}^k \right) + u_i \quad i = 1, \dots, N
 \end{aligned}$$

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

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Name	Model(E4)	Data/description
USLIB	$\Delta\tau_{it}$	$\ln(1+\tau_{it}) - \ln(1+\tau_{it-1})$; τ_{it} : U.S. Ad valorem bound rate (post-UR). τ_{it-1} : U.S. Ad valorem base rate (pre-UR)
ANYPTA	G_i	=1, if exported to US under any PTA before UR implemented (1994)
s_{iT}^k		Partner k 's export share of top 5 exporters of i to U.S.
BARPOW	$\sum_k s_{iT}^k \Delta(b_t - b_t^k)$	$\sum_k s_{iT}^k \Delta(\ln \text{GDP}^{\text{U.S.}}_t - \ln \text{GDP}^k_t)$
TOTLIB	$\sum_k s_{iT}^k \sum_j \Delta\tau_{jt}^k w_{jt}^k$	$\sum_k s_{iT}^k (\sum_j \Delta\tau_{jt}^k w_{jt}^k)$
UNILIB		$\sum_k s_{iT}^k (\sum_j \Delta\tau_{jt}^k - \sum_j \Delta\tau_{jt}^{\text{rk}}) w_{jt}^k$
$\sum_j \Delta\tau_{jt}^k w_{jt}^k$		where $\Delta\tau_{jt}^k \equiv \% \text{ change } 95-86 \sim \ln(\tau_{j95}^k / \tau_{j86}^k)$ $w_{jt}^k \equiv \text{Share of good } j \text{ in } k \text{'s imports}$
$\sum_j \Delta\tau_{jt}^{\text{rk}} w_{jt}^k$		where $\Delta\tau_{jt}^{\text{rk}} \equiv \% \text{ change } 95-92 \sim \ln(\tau_{j95}^k / \tau_{j92}^k)$

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, φ in (E4), is positive and significant over the different specifications → 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 β –
 - 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 ρ --Two important factors
 - Controlling for the existence of NTBs
 - Addressing its endogeneity
- The IV estimates of reciprocity ρ --- 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

$$(1) \quad \ln p_t^d = \ln(1 + \tau_t) + \ln p_t^w$$

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

$$(2) \quad \pi \equiv \Delta \ln p_t^d / \Delta \ln(1 + \tau_t) = 1 + \Delta \ln p_t^w / \Delta \ln(1 + \tau_t)$$

5.4 INTERPRETATION OF ESTIMATES AS PRICE EFFECTS ...

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

$$(3) \quad \Delta \ln p_{PTAt}^d - \Delta \ln p_t^d = \Delta \ln(1 + \tau_{PTAt}) - \Delta \ln(1 + \tau_t) = \phi$$

where x_{PTAt} 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

$$(4) \quad \Delta \ln p_{PTAt}^d / \Delta \ln p_t^d = \Delta \ln(1 + \tau_{PTAt}) / \Delta \ln(1 + \tau_t) = 1 + \phi / \tilde{\alpha}$$

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

$$(5) \quad \Delta \ln p_t^w = (\pi - 1) \Delta \ln(1 + \tau_t)$$

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

$$(6) \quad \Delta \ln p_{PTAt}^w / \Delta \ln p_t^w = \left\{ \Delta \ln(1 + \tau_{PTAt}) / \Delta \ln(1 + \tau_t) \right\} * (\pi_{PTA} - 1) / (\pi - 1) \\ \approx 1 + \phi / \tilde{a} \text{ if } \pi_{PTA} \approx \pi < 1$$

- 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 φ ---
 - In terms of price effects and
 - In relation to the multilateral negotiation variables β , ρ
- *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.

5.6.1 AN ALTERNATIVE TEST

- 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 :

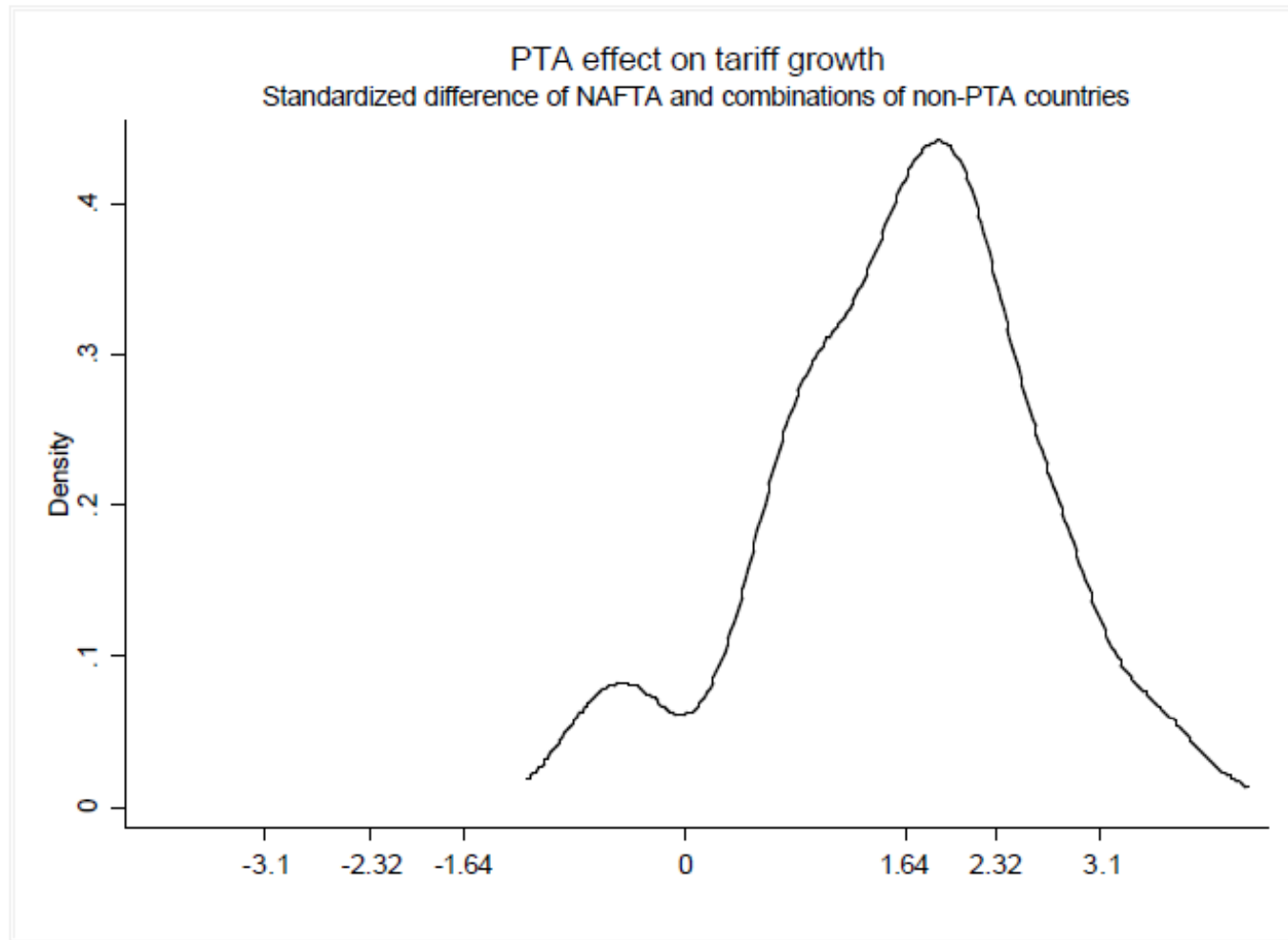
$$\begin{aligned}
 (E5) \quad \Delta\tau_{it} = & \delta_C G_i + \eta_C G_{ic} + a_c + a_{cl} + \beta_c \sum_k s_{iT}^k \Delta(b_t - b_t^k) \\
 & + \rho_c \sum_k s_{iT}^k \sum_j \Delta\tau_{jt}^k w_{jT}^k + u_{ic} \quad i = 1, \dots, N
 \end{aligned}$$

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

Figure 3



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 !