



Barriers to Trade in Environmental Goods: How Important they are and what should developing countries expect from their removal

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Outline

- Doha: Elusive triple win: (2001)-EGA 2014- ([here](#))
- Literature suggests superior environmental outcomes for countries that trade in Environmental Goods (Egs) ([here](#))
- Reasons for non-participation in negotiations by developing countries. ([here](#))
- Contribution: Patterns of trade, tariffs & NTBs to check reasons for non-participation: Sample (47 +EU) countries
 - 2 EG lists (APEC(54) and EPP(106))
 - By 4 income groups : HIC(10), UMIC(14), LMIC(16), LIC (10) ([here](#))
- Cross-country structural gravity model for 2 EG lists by income group([here](#))
 - Theory-consistent elasticities
 - Simulations (preliminary) on bilateral trade flows to elimination of Tariffs on EGs vs non-EGs
- Next steps ([here](#))

Elusive triple win: Doha (2001)-EGA (2014-?)

Expected Triple win

1. Trade: Decrease cost of environmental technologies, stimulate innovation and transfer of technologies; protect resources
2. Developing countries: Access to HIC markets for Asian economies + higher-quality EGs on world markets for all developing countries
⇒ Emissions ↓; Environment preserved for all
3. Our planet: At global level environment better preserved especially if wide definition of EGs

The reality of negotiations

■ Reduction/elimination of barriers to trade in EGs

But how defined (...by negotiators)? Project, request/offer, list (HS6)

⇒ 18 years of wrangling at Doha/EGA ⇒ Only tariffs on agenda

■ NTBs left off agenda

■ Env. Services (ESs) not on agenda (though strong complementarity with EGs)

⇒ A minima agenda at Doha, APEC, and EGA negotiations (2014-[back](#))

Superior environmental outcomes for countries that trade in EGs

Conclusion on importance of Triple win

- Success: Key ingredient for transition to green development path
- Success: key to prevent collision of WTS and climate regime
- Outcome: Wrangling over negotiations for nearly 20 years

Evidence

- Strict environmental policies associated with RCA in EGs.
- Identification via policy changes (e.g. KP). Environmental policies affect trade flows
- RTAs with environmental provisions have better outcomes on emissions
- Emissions gap for GHGs emissions per capita smaller for countries that engage in bilateral trade in EGs

⇒ Lower barriers to trade in EGs expected to lead to increased trade in EGs , and to lower per capita GHG emissions ([back](#))

Why non-participation by developing countries in negotiations.

1. Lists drawn by HICs/UMICs (APEC(54)/CLEG(248)/ WTO(411) lists reflect comparative advantage of HICs. Lists systematically exclude goods with tariff peaks (confirms mercantilistic behavior by negotiators).
2. Fear by developing countries of large responses on import side but low on export side
3. 'Grow up first, clean up later' (get a large home market after environmental regulations create a market for Eggs)
4. Stay on sidelines: small stakes (low tariffs of HICs \Rightarrow little market access) + avoid dealing with 'like products' and PPMs at WTO

Patterns of Trade and Protection

TARIFFS

- $TAR(EG) \approx 1\% < TAR(\text{non-EG})$ [for APEC & EPP] ([here](#))
- $TAR(HIC) < TAR(UMIC) < TAR(LMIC) < TAR(LIC)$ [APEC;EPP]
- LIC & LMIC 20%-40% Positive exports [APEC;EPP] ([here](#))

SUBMISSION LISTS: MERCANTILISTIC BEHAVIOR BY NEGOTIATORS

- Higher probability of Revealed Comparative Advantage ($RCA > 1$) for goods on EG list than for goods on non-EG list ([here](#))
- Almost no tariff peaks on EG lists ([here](#))

NTMs/NTBs

- Counts of NTMs and NTBs ([here](#))

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Gravity Model

- We estimate the following gravity model in cross-section (2014):
- $$X_{ij}^k = \exp \left(\alpha_{tariff} \log \left(tariff_{ij}^k \right) + \alpha_{tariff-EG} \log \left(tariff_{ij}^k \right) * EG^k + \beta_{NTB} \log \left(NTB_{ij}^k \right) + \beta_{NTB-EG} \log \left(NTB_{ij}^k \right) * EG^k + \delta Bil_{ij} + \gamma_i^k + \gamma_j^k \right) * \mu_{ij}^k$$
- Poisson Pseudo Maximum Likelihood estimates to account for large number of zeroes in the data and heteroskedacity
- Identification assumption: TAR and NTBs are exogenous
- Bil_{ij} :bilateral controls (distance, common language, ...)
- γ_i^k and γ_j^k : country-product-level dummies that capture multilateral resistance terms.
- Gives elasticity estimates of tariffs and NTBs for EGs and non-EGs

Gravity estimates

	APEC	EPP
Log(Tariffs)	-7.842*** (0.393)	-7.786*** (0.391)
Log(Tariffs)*EG	6.746*** (1.453)	-0.170 (2.228)
log(NTB)	-0.344* (0.205)	-0.338* (0.201)
log(NTB)*EG	0.598** (0.296)	0.319 (1.139)
<i>Interactions</i>		
Log(Tariffs)+ Log(Tariffs)*EG	-1.097 (1.45)	-7.956*** (2.21)
log(NTB)+ log(NTB)*EG	.254 (.205)	-.109 (1.12)

Robust standard errors in parentheses

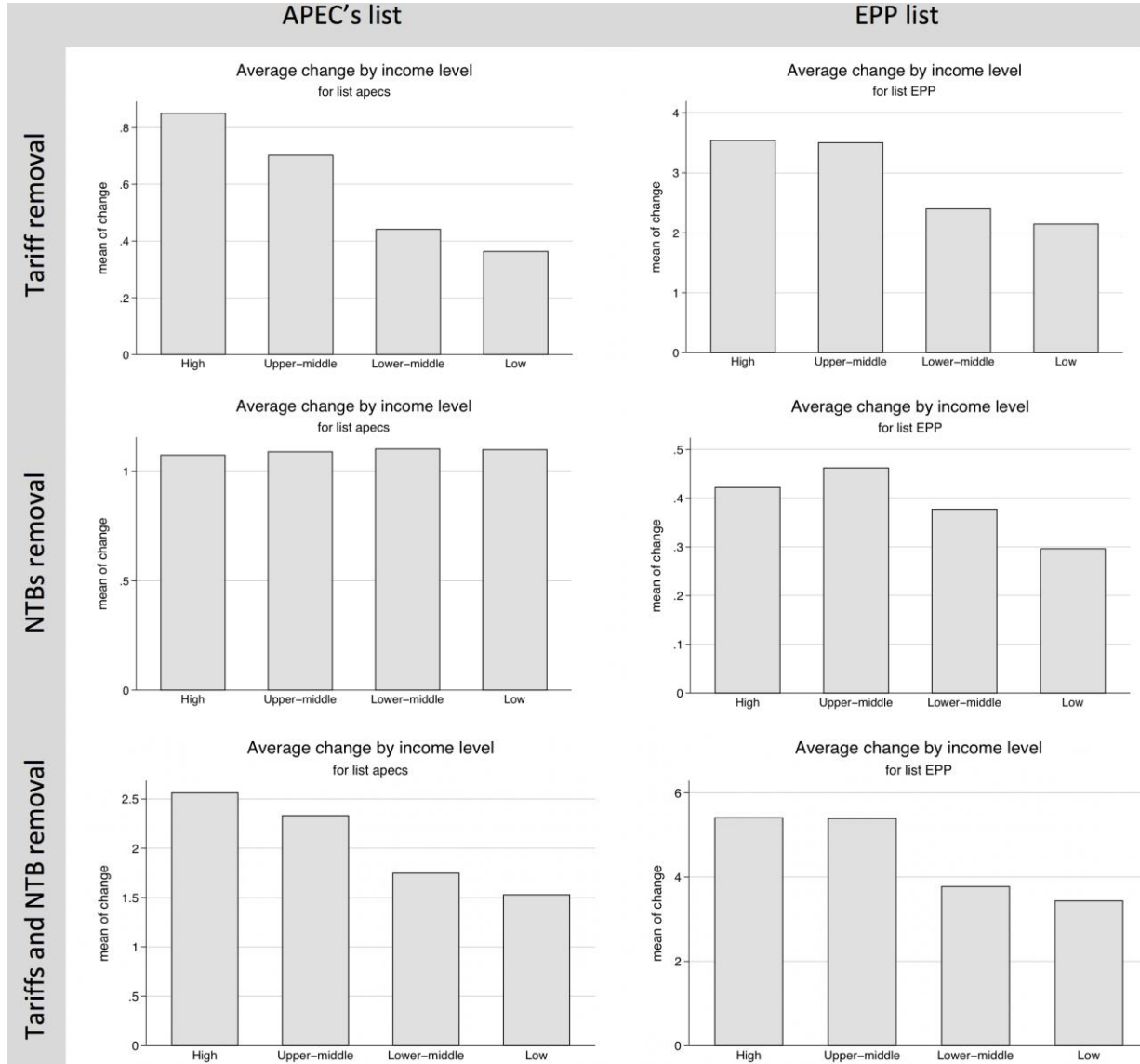
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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GE PPML

- Simulate the effect of a change in policy on trade flow (Yotov et al., 2016)
- Multilateral resistance terms are adapting to the new policy
- Here, only a conditional effect due to data limitations (no production data)
 - Production and therefore volume of trade held constant (so capturing reallocation of imports between EGs and non-EGs)
 - NTB estimates unsatisfactory

Change

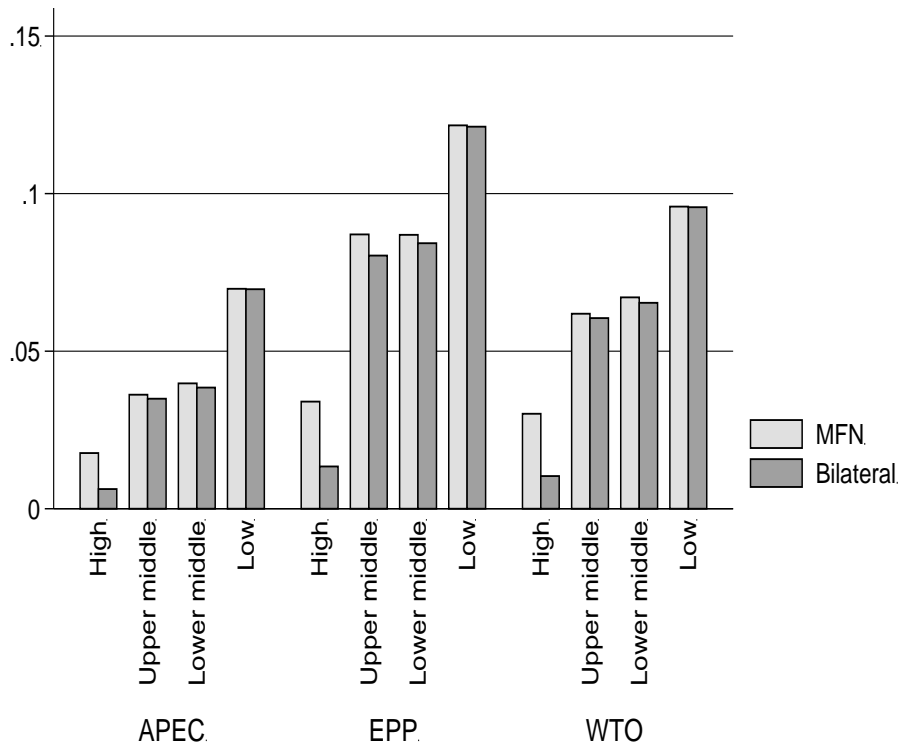


Next steps

- Restrict our analysis to two lists of EG and two lists of EPP (small and large).
 - Core list of EGs and core list of EPPs
 - Large lists : WTO (411) and EPP (106)
- Perform more realistic analysis of trade policy (only HICs or HICs and UMICs eliminate tariffs)
- Use regulatory distance as an alternative better measure to NTB count that varies very little by destination

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Applied Tariffs by lists and groups

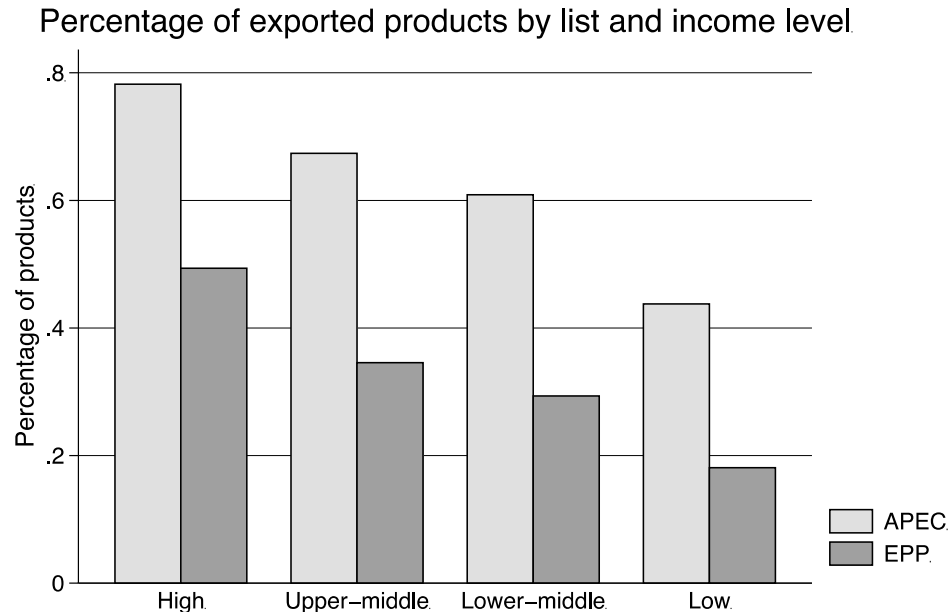


Patterns

1. Tariffs on EGs lower than non-EGs for all lists
2. Very little on the table for HICs
3. Tariffs increase for all lists HICs → LICs
4. Only LIC group expected to have non-negligible increase in Trade flows
5. Only HICs have reduced applied tariffs on EGs via RTAs

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Exports by EG list



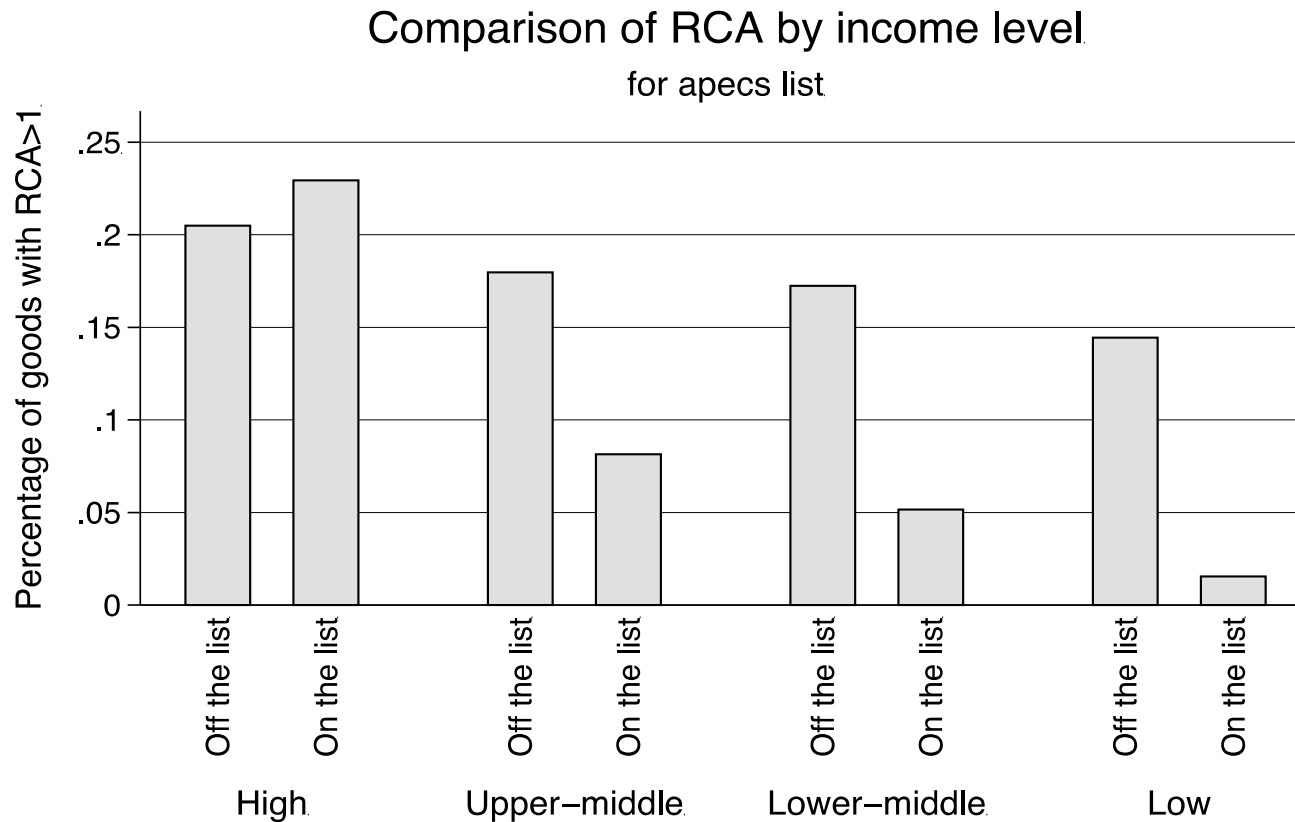
Patterns

- HICs chose EGs they exported
- Developing countries would do better on EPP list
- ...but still less with only between 20% and 40% of goods on EPP list that are exported.

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Mercantilism at work (1)

- For APEC list, probability of $RCA > 1$ larger for goods on list, but only for HICs

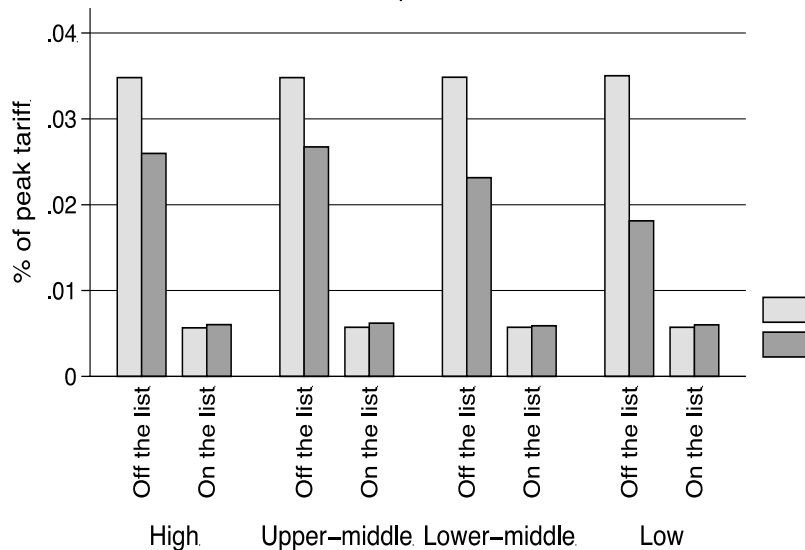


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Mercantilism at work (2)

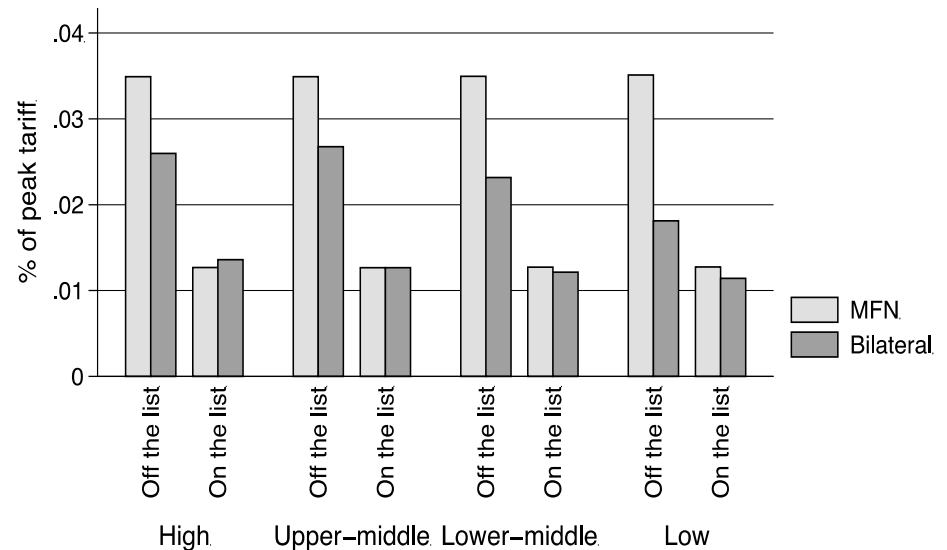
- Insignificant tariff peaks on both lists
- ...but lower on EPP list (difference reflecting APEC list concentrates on intermediate goods)
- Conclusion: Not much on the negotiating table

Percentage of goods with peak tariff.
for apec list



Note: A peak tariff is defined a tariff higher than three times the country's average MFN;

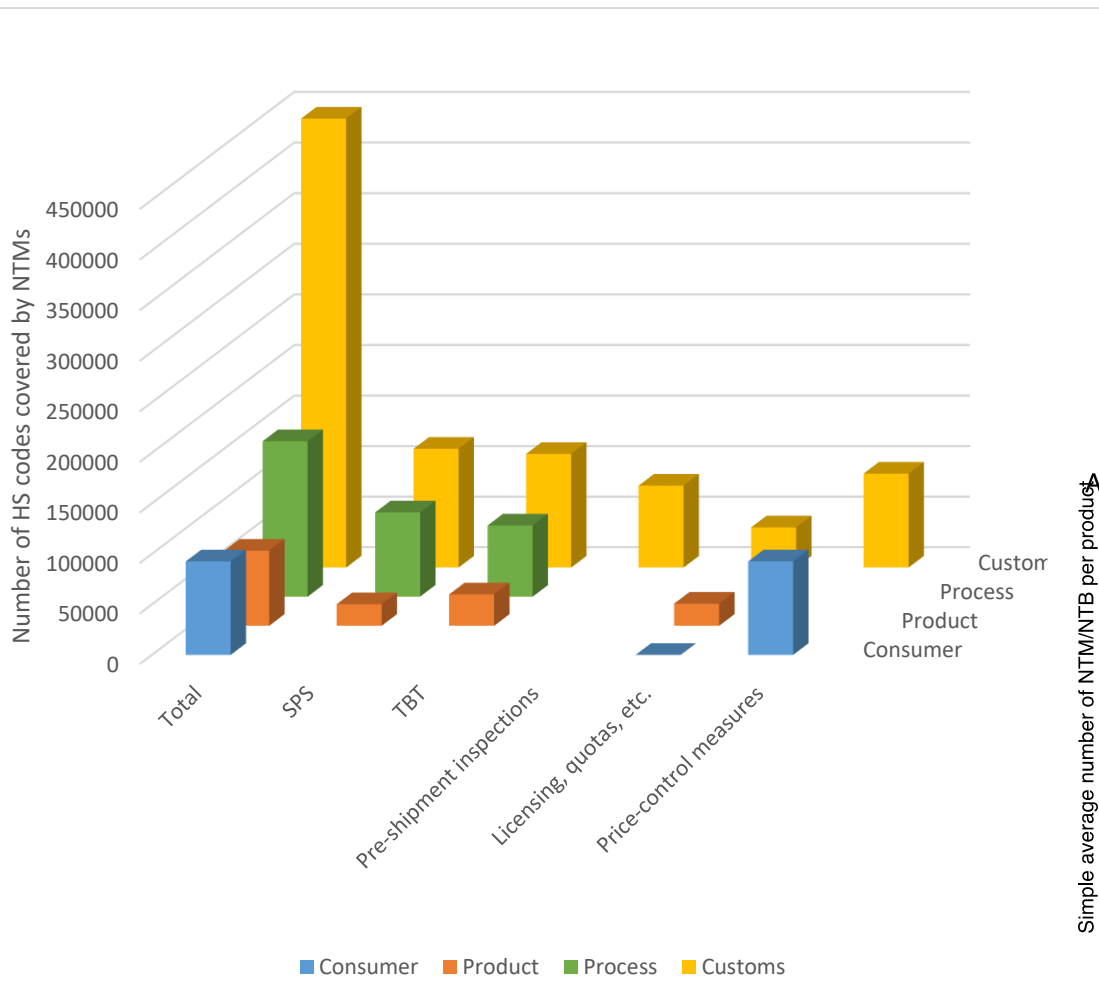
Percentage of goods with peak tariff.
for EPP list



Note: A peak tariff is defined a tariff higher than three times the country's average MFN;

Counts of NTBs and NTMs

- Larger average number of NTMs and NTBs for HIC group
- Patterns across groups similar for EPP list
- NTMs and NTBs patterns are similar for LIC and LMIC groups
- But problem for econometric estimates: Very little bilateral variation in NTBs



Average of number of NTM per product by income level

