

The Effects of Non-Tariff Measures on Prices, Trade, and Welfare: CGE Implementation of Policy-Based Price Comparisons

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A roadmap of the presentation

- We construct a policy database of alleged NTMs by product, sector, type, and country imposing them
- Then, we econometrically assign price gaps to them using retail prices, controlling for sector-specific causes of deviations from PPP (approximately, the wholesale-retail margin)
- Then, we simulate their hypothetical elimination in CGE for three sectors (processed foods, apparel, and footwear)
- All of this is done with a 2001 baseline.
- This is work in progress.

Sources of Policy Data

- The USITC NTM Database
 - 3000 + records drawn from EU Market Access Database, USTR National Trade Estimate, WTO Trade Policy Reviews
- UNCTAD TRAINS
- “Complaint reports” vs. self-notification

Contents of the USITC NTM Database
53 countries (including EU), 15 policy categories

- Anticompetitive practices/competition policy
- Corruption
- Customs
- Export policies
- Government procurement
- Import licensing
- Import prohibitions
- Import quotas
- Intellectual property rights (but this probably *lowers*, not *raises* prices)
- Investment
- Sanitary and phytosanitary requirements
- Services
- Standards, testing, certification and labeling
- State trading
- Taxes

Product, sector, and specific barrier detail is included – see Manifold and Donnelly (2003).

Econometric Strategy

1. Estimate the tariff equivalent of NTMs for many products and countries.

- EIU City Data: Retail prices for 160+ products, housing and services, from 123 cities, in 79 countries

2. Use explicit data on NTM incidence.

- UNCTAD TRAINS (Using WITS)
- USITC NTM Database
- Definition used in this exercise: TRAINS 6000 (quantitative restrictions) plus USITC NTM entries for import quotas, bans, non-automatic licensing, VERs, prior authorizations

3. Estimate the tariff equivalent of NTMs directly.

- Differentiated products model of retail prices
- Dummy variables capturing NTM incidence

Micro Foundation - Retail Price Equation

$$P_i^R = \bar{P} + \bar{m}_i + \sum_{j=1}^M q_j (C_{Tij} + t_{ij} + r_{ij}) \quad (5)$$

Where:

P^R is retail price in city i

$\bar{P}$ is average "world" price

t are specific tariffs

q_j is the share of varieties produced by city j

μ are distribution costs in city i

C are transport costs

r are rents from NTMs

Assumptions: All cities consume all varieties of a good, and the observed retail price is a simple average of all varieties of good x found in retail stores in city i. This price reflects the home country's tariffs, NTMs, local distribution costs, and transport costs.

III. Estimation Method

- Estimate as a panel--cross-country, over cities--using GLS, and country heteroskedasticity correction
- Assume the constant term incorporates the impact of large country trade barriers on smaller countries' prices
- Include SUR correction
- Pool data for like products and include product-specific constants

Estimating equation (pooled by GTAP sector)

$$P_r^s = a'_0 + a'_1 RG_r + a'_2 D_r + a'_3 Z_r + a'_4 \tau'_r d_r + a'_5 \tau'_r t_r + a'_{6r} DUM_r \cdot NTM_r$$

- In which P are the retail prices, RG are regional-specific fixed effects, D are specific product dummies, Z are city-specific variables influencing the markup, d is distance (remoteness), t is the ad valorem tariff, and DUM*NTM indicates that a city is in a particular country having an NTM.
- Log-log GLS with SUR across products/within sectors, correcting for region-specific heteroskedasticity.
- In some cases RG is used as a proxy for DUM*NTM when this is necessary to achieve identification of the model.

TABLE 2. Estimates of the Impact of NTMs on Prices.

	GTAPSECTOR													
REGION	Vegs, fruit, nuts	Bovine meat prods.	Meat prods. nec	Veg. oils and fats	Dairy prods.	Food prods. nec	Bevs. and tobacco prods.	Wearing apparel	Leather products	Paper prods., publg.	Chemical, rubber, plastic products	Metal prods.	Electr. equip't.	Mach. and equip't. nec
Zimb/ S. Africa				90										
Rest of SSA						56						45		
AUSNZ														
EU								66 ²					15	
FSU/EE								37						
Rest of LA														
MERC									112					
Mexico/CA				30			25	101	80		36			
SE Asia				49						67				
South Asia										119				
East Asia				29										
China		191 ²												
Canada								25 ²						
Japan								190 ²	39 ²	199				
ME/TKY		19											22	38
N. Africa														
EFTA														
US								16 ²						

Conceptual Framework

- How to introduce NTM into simulation models?
 - Model explicitly (e.g., quantity constraints)
 - Introduce as price wedges or price gaps (NTMs introduce price distortions)
- How to introduce price gaps into simulation model?
 - Tariff equivalent
 - Export tax equivalent
 - Structural frictions
- Choice made on a case by case basis

Conceptual Framework

	Features	Impact of removal	Examples
Tariff Equivalent	Economic rents collected as government revenues	Worse terms of trade, Efficiency gains	Quantitative import restrictions
Export tax equivalent	Economic rents collected by exporting country	Better terms of trade, Efficiency gains	Voluntary Export Restrictions
Sand in the wheels	No economic rents, all deadweight efficiency losses	Worse terms of trade, Efficiency gains	Burdensome administrative procedures, structural frictions, standards

Simulated removal of barriers - Highlights

- Global welfare gains from removal of this class of NTMs are about \$90 billion, mostly accruing to liberalizers. This is probably low – see last slide
- Biggest gains from regional liberalization by Japan (\$37.7billion) and the EU (\$28.7 billion)
- Biggest gains from sectoral liberalization in apparel (\$64 billion), misc. machinery and equipment (\$11.7 billion), paper and publishing (\$5.6 billion) and leather and footwear (\$4.6 billion)

Goals of future research

- Cover a wider range of policies – should raise estimate of effects.
- Improve NTM estimates (which are currently unconstrained as to sign) - should raise estimate of effects. Also use multiple years of price data.
- Estimate quantity effects econometrically
- Tailor simulation technique to type of policy – effect uncertain.