Non Tariff Measures: A “Quantum of Solace” for Trade Protectionists?

Martin Banse, Janine Pelikan
Tanja Befus*, Martina Brockmeier*

IATRC Meeting, Ft Meyers FL, December 13-15, 2009

* University of Hohenheim, Stuttgart, Germany
WTO notifications of TBT and SPS measures

Number of notifications

- TBT
- SPS
- MFN-Tariff (simple average)


Total number of notifications in %
NTMs in the financial crisis

Implementation of 47 trade measures, according to the World Bank’s monitoring list from October 2008 to February 2009, e.g.,

- China’s import ban on Irish pork, rejection of Italian brandy, British sauce, Dutch eggs and Spanish dairy products…
- Indonesia’s requirement that five product categories (including food products) would be permitted in only five ports and airports

“Incipient but Worrisome Trends” (World Bank, March 2009)
NTMs in the financial crisis

According the EU Commission 223 trade restrictiveness measures are planed or introduced from October 2008 to October 2009 but

“The use of border measures … has been clearly contained given the existing WTO disciplines that had a notable effect…At the same time other types of behind-the-border trade restrictions have multiplied where WTO rules are less stringent.”

(EU Commission, 2009)
### Definition of Core and Non-Core NTMs

<table>
<thead>
<tr>
<th>Non-Tariff Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures with trade distorting effects</td>
</tr>
</tbody>
</table>

**Core NTMs**
- Boarder measures that are directly trade related
  - *e.g., price or quantity control measures*

**Non-Core NTMs**
- Internal measures that are implemented and monitored at the boarder or that arise from the general public
  - *e.g., technical measures*

- **great variability in design** *(various effects on trade)*
- **trade impeding** *(non tariff barriers)*
- **trade creating** *(more transparency, information, compatibility, reduction of risks)*
- **trade diverting** *(discriminatory effects)*
Concept of the project

Non Tariff Measures at the HSx tariff line level

- Alternative Indices (e.g., weighted Indices, TRI, MTRI, ...)
- Frequency and Coverage Indices

Gravitii Model
Effects of NTMs on the traded quantities

- Ad valorem equivalents
- Elasticities from the literature

CGE or PE Model
Economic effects of NTMs

aggregation
Concept of the project

Non Tariff Measures at the HSx tariff line level

Frequency and Coverage Indices
Inventory Approach

**Frequency Ratio**
Accounts for the presence or absence of NTMs
**Problem:** Does not reflect the relative importance of NTMs
No information about trade restrictiveness

**Trade Coverage Ratio**
Percentage of trade subject to NTMs
**Problem:** Endogenous import values
No information about trade restrictiveness

*Could be used as explanatory variables in models, e.g., gravity models*
Occurrence of NTMs in agriculture
Import Coverage Ratio

Source: Befus, 2008
Occurrence of NTMs in agriculture
Import Frequency Ratio

Source: Befus, 2008
TRAINS data material

- Data is fragmentary
- Only few years for specific countries are available.
- Comparison of all countries in one year is not possible
- Some countries report old data, e.g., most recent year 1993 for some African countries
- Reporting on different tariff line levels (HS2 to HS12) makes the aggregation more difficult (within one country and between countries)
- Biased against the notification behavior of countries
Concept of the project

Non Tariff Measures at the HSx tariff line level

Frequency and Coverage Indices

Gravity Model
Effects of NTMs on the traded quantities
Why do we decide on the gravity approach?

Price based approach
- Comparison of the domestic price (with NTM) with a reference price (without NTM)
- Calculation of Ad Valorem Tariff Equivalents (AVE)

\[ TE = \left( \frac{P_d - P_r}{P_r} \right) \cdot 100 \]

- \( P_d \) = domestic price
- \( P_r \) = reference price (world market price under free trade)

How to find the reference price?
A complete model have to be specified and estimated
Why do we decide on the gravity approach?

Quantity based approach (gravity approach)

- Econometric estimation of the traded quantities without NTMs with the gravity approach and comparison with observed trade data.
- Indirect estimation of tariff equivalents through price elasticities from the literature

This approach can be applied for large data sets
Concept of the project

Non Tariff Measures at the HSx tariff line level

Alternative Indices (e.g., weighted indices, TRI, MTRI,...)

Frequency and Coverage Indices

Gravitiy Model
Effects of NTMs on the traded quantities

Elasticities from the literature
Ad valorem equivalents

CGE or PE Model
Economic effects of NTMs
Partial or general equilibrium models

- Price wedge or tariff equivalent of the NTMs
  = difference between (ideally undistorted) world market and domestic price

**Difficulties:**
- If imports and domestically produced goods are imperfect substitutes
- Variability of prices leads to varying price wedges

- Inputs:
  - Volume changes from, e.g., gravity models
Three categories of economic effects according to Fugazza and Maur (2008)

- Supply Shift Effect
- Demand Shift Effect
- Protection Effect
Supply Shift Effect

- E.g., standards or technical regulations that change compatibility
- Need for an appropriate supply function

- Fixed and variable costs can be affected
- Two types of fixed costs:
  1) Related to setting up production (generic)
  2) Specific to any destination market

- Could be modeled via increasing returns to scale
Demand Shift Effect

E.g., Affecting consumer behavior by compulsory information

Lack of empirical data

Could be modeled by adjusting the Armington elasticity of substitution among imported goods or between imported and domestic goods.

Elasticities are difficult to compute
Protection Effects

Generate a wedge between the world market and the domestic price of the importing or exporting country.

Change in import or export tax
- But: NTBs generate no tax revenue
- How to interpret the welfare effects?

Efficiency effects
- Changes in the price of imports from a particular trading partner.
- Assumption: Price wedge is entirely explained by the efficiency losses/gains.
Challenges

- Globally consistent data sets
- Appropriate weighting of tariff equivalents to compute sectoral and regional data bases
- Distinction between the effects of tariffs and NTMs
  Additive?
- Discriminatory effects of NTMs between foreign trading partners
  need for bilateral price wedges
More slides...
Data sources, quantitative

WTO Documentation
- NTM notifications of member states
- extensive set of computation

United States International Trade Commission data base (USITC)
- different data sources
- 53 countries
- list of complaints by exporters

Trade Analysis and Information System (TRAINS), UNCTAD
- 97 countries and 5000 products
- more than 100 measures
Data sources, qualitativ

- WTO trade disputes
- Business surveys
NTMs in the WTO

- Tariffication of NTMs in the Uruguay Round
- Extensive set of computation
- Disciplines on NTBs: Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary Measures (SPS)
Frequency Ratio

Accounts for the presence or absence of NTMs
Problem: Does not reflect the relative importance of NTMs

\[ FR_{j,t} = \left[ \frac{\sum_{i=1}^{k} D_{i,j,t} \cdot U_{i,j,t}}{\sum_{i=1}^{k} U_{i,j,t}} \right] \cdot 100 \]

- \( i \) = tariff line
- \( j \) = importing country
- \( t \) = year
- \( D \) = dummy variable (1 = NTM; 0 = no NTM)
- \( U \) = dummy variable (1 = imports; 0 = no imports)
Trade Coverage Ratio

Percentage of trade subject to NTMs

Problem: Endogenous import values

\[ CR_{j,t} = \frac{\sum_{i=1}^{k} \Phi_{i,j,t} \cdot M_{i,j,t}}{\sum_{i=1}^{k} M_{i,j,t}} \cdot 100 \]

- \( i \) = tariff line
- \( j \) = importing country
- \( t \) = year
- \( D \) = dummy variable (1 = NTM; 0 = no NTM)
- \( M \) = import value