

ARTNeT Capacity Building for Trade Policy Researchers

Supporting Equitable Development in ASEAN:
Impact of Regional Integration on CLMV Countries

**Measuring the
economic impacts
of NTMs

(Part 2)**

- 1. Policy discussion**
- 2. AVE introduction**
 - Practical quick example

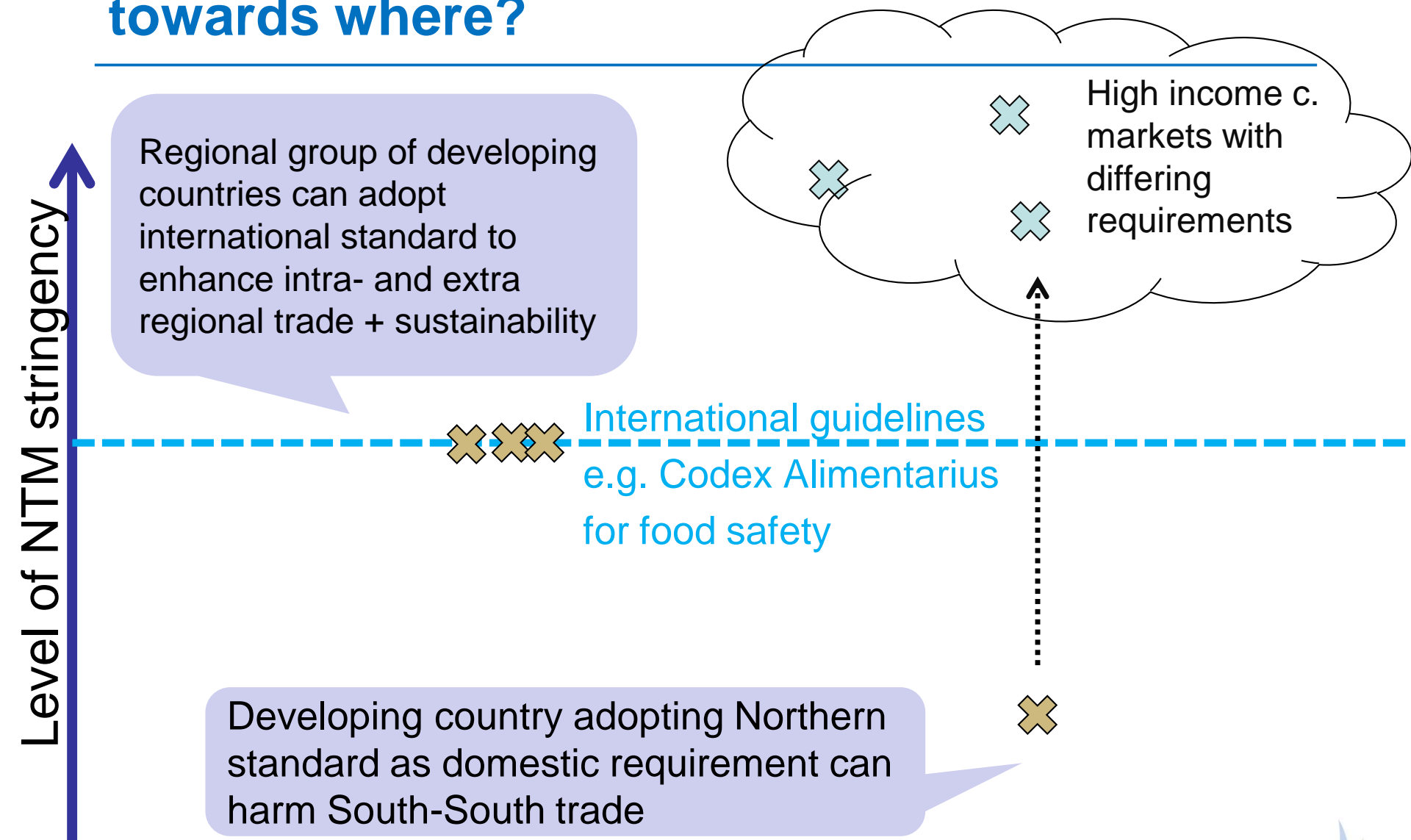
Session 10



-
- Some may need streamlining
 - Some may need improving regulation to upgrade industrial capacities
 - Not done isolated in government departments
 - Pay attention to international standards
 - Work together with business sector
 - Consult
 - Program for businesses to help the to comply
 - Infrastructure
 - Laboratories



Convergence: how? towards where?



Policy design

What

- Work on common conformity assessment
 - Mutual recognition
- If there is no possibility for integrating into harmonization

Which products

- Concentrate on those products that are more relevant in the export basket, especially those that are traded within the region of integration (ASEAN)
- Or those with export potential as represent an 'expertise' of the country
 - Same for an intermediate product to be part of value chain
- Or those with higher skilled labor or technology (preferably those with some processing)
- Or those that employ more population



Malaysia report

- 4.4 Harmonization of Food Trade in ASEAN: Some Thoughts
- ASEAN Members have begun to recognize the desirability of having **common measures**. For trade purposes, harmonization of standards enables food companies to adhere to one set of regional regulations instead of adjusting to a diverse array of regional standards of Member countries. Following which, ASEAN members have expressed their intention to use **global food standards as a basis for harmonization efforts** in the food sector at the regional level. Yet, there has not been much progress in this regard (AFBA, 2012).
- One reason is that the diverse regulations that govern food and nutrition labelling across ASEAN rest on the different International Guidelines followed by Member countries when preparing national regulations. Kasapila and Sharifudin (2011) point out that for **food and nutrition labelling, Singapore, Malaysia, Brunei, Laos, Vietnam and Cambodia have followed the Codex guidelines** in preparing their regulations. Conversely, **Thailand and the Philippines, to some extent have adapted the United States nutrition labelling guidelines**. Further, Member countries with more developed food safety systems have also adopted the **'hazards' based-approach, which do not allow for regulatory convergence**, as there is no common basis for the adoption of common food safety standards. **What is needed is a shift towards a 'risk' based approach, which comes with a scientific basis (see also Henson and Caswell, 1999) to adopt common safety standards.**



AVE

Ad Valorem Equivalents

Introduction: AVEs of NTMs

Definition ad valorem equivalents (AVEs)

- **AVE: tariff equivalent** which has the same impact on trade
- AVE: gap btw. product's price with and without the NTM
 - Ex: price without NTM: 100.
If AVE: 5% price with NTM: 105

Why do we compute AVE?

- Quantification of NTMs' effects difficult: diversity of NTMs; no simple metric; few data
 - AVEs solve (partially) these issues
 - .



Introduction (cont'd)

Based on AVEs of NTMs, one should be able to:

- Distinguish btw. protectionist and non protectionist NTMs
- Rank NTMs according to their stringency

Examples of questions investigated using AVEs (non-exhaustive list)

- Which countries have the most stringent NTMs?
- Which are the most affected products?
- Which are the most affected exporters (given their export structures even if NTMs are usually unilateral measures)?



How to compute AVEs for NTMs

Price-comparison approach (direct method)

- Principle: NTMs affect product's price (increase)
- Comparison of prices with & without NTMs provides the AVE

Approach based on quantities (indirect method)

- Principle: NTMs affect trade flows btw. countries
- Comparison of flows with & without NTMs provides the quantity impact of NTMs
- Quantity impact then converted into AVE using import demand elasticities
- Price & quantity are linked , so both methods should provide similar results
- Which approach should be used? depends on data availability



Indirect approach based on quantities

2-steps approach

- Step 1: Quantity effect of NTMs (trade equation: difference btw. predicted & observed flows)
- Step 2: Conversion of quantity effect into AVE (using import demand elasticities)

Advantages

- Availability of trade data even at a disaggregated level for many products and countries
- Target of NTMs often imports □ Relevant to focus on NTMs' trade effects (rather than on prices)

Drawback: Indirect calculation



Empirical implementation

Step 1

- Estimation of import demand equations at HS6 level (78 countries, 4575 products)
- Product-by-product estimation. Dependent variable: aggregated imports at the importing country-product level
- Control for tariffs and countries' characteristics (Leamer, 1990: comparative advantage: trade btw. countries explained by differences in factor endowments)
- NTMs: dummy variable (TRAINS data)

Step 2

- Quantity effect converted into an AVE using import demand elasticities



AVEs of NTMs: results by KNO (2009)

Significant AVEs

- Mean AVE of NTMs for entire sample at 12%. If weighted by imports: mean AVE: 10%
- If computation only done for tariff lines with a NTM, mean AVE much higher (45% and 32% respectively)
-

Strong variation in NTMs' AVEs across countries

- Simple mean AVE: varies from almost 0 to 51% (Import-weighted AVE varies from 0 to 39%)
- But no clear link btw. NTMs' AVEs & countries' GDP per capita

Comparison btw. NTMs and tariffs?

- For 55% of tariff lines subject to NTMs, AVE of these NTMs higher than the tariff



AVEs: results with trade-enhancing NTMs

HS section codes	HS section names	Simple frequency ratio of NTMs	AVE of NTMs all HS6 lines (mean)		AVE of NTMs if NTM=1 (mean)	
			Unconstrained estimation ^a	Constrained estimation ^b	Unconstrained estimation ^a	Constrained estimation ^b
I	Live animals, animal products	0.209	0.018	0.128	0.084	0.609
II	Vegetable products	0.223	0.028	0.128	0.126	0.574
III	Fats and oils	0.202	0.067	0.145	0.333	0.717
IV	Beverages, spirits, tobacco	0.259	0.013	0.157	0.049	0.608
V	Minerals	0.054	0.027	0.046	0.500	0.846
VI	Chemicals, allied industries	0.134	0.033	0.088	0.244	0.657
VII	Plastics, rubber	0.121	0.052	0.094	0.432	0.774
VIII	Hides, leather, furskins	0.074	0.029	0.056	0.395	0.763
IX	Wood and wood articles	0.105	0.051	0.077	0.486	0.732
X	Pulp of wood, paper, printing	0.096	0.039	0.071	0.404	0.744
XI	Textiles, apparel	0.097	0.033	0.068	0.339	0.695
XII	Footwear, headgear	0.103	0.025	0.064	0.241	0.622
XIII	Stone, cement, ceramic, glass	0.081	0.055	0.074	0.681	0.917
XIV	Pearls, precious metals and stones	0.003	0.002	0.002	0.732	0.732
XV	Base metals and articles	0.085	0.044	0.067	0.516	0.796
XVI	Machinery, electric and video	0.129	0.083	0.114	0.648	0.887
XVII	Vehicles, aircraft, vessels	0.109	0.035	0.080	0.317	0.730
XVIII	Optical, photo., medical instr.	0.096	0.042	0.074	0.441	0.775
XIX	Arms, ammunition	0.044	0.008	0.021	0.182	0.474
XX	Miscellaneous	0.108	0.062	0.100	0.570	0.925
	All sections	0.121	0.044	0.088	0.362	0.729

^a: Unconstrained estimation means that impact of technical regulation NTMs on trade is not restricted in the estimation

^b: Constrained estimation means that technical regulation NTMs are constrained to have a non positive impact on trade

Source: Beghin, Disdier and Marette (2015)

General Equilibrium

Ways of representing effect of NTM in CGE models

Ways to represent its effect in CGE models

- **txs**. When increased compliance costs lie on the **exporter**
 - it is modeled as AVE of a surcharge to and export tax
- **tms**. When increased compliance costs lie on the **importer**
 - it is modeled as an AVE added to the import tariff
- **ams**. **Iceberg costs for trade inefficiencies**, account the “effective” decrease in quantity exported due to NTM.
 - There is a precise parameter in GTAP to account for trade efficiency that can be used to model this effect, and so shock is straightforward, without recalibration.
 - An example would be Peru exporting fresh fruit to the US, which considers that the fruit fly is not acceptable (while Peruvians argue it is not different from the US fly). So fruit need to be brought to room temperature and fumigated. This reduces drastically the number of days the fruit can be sold after breaking the cold chain

Example, model reducing NTMs by 25% (from AVE)

- (CGE) estimates highlight distributional impacts across countries and factors not evident from econometrics alone

Ways of representing effect of NTM in CGE models

- Limitations
 - Rents modeled as tariffs and export taxes are not actually collected by government, and if the model does not have a regional household account, this can be a problem.
 - Also, the benefit to the society of better regulation is not well accounted for, eg. Public health prevention.
 - Another limitation is that tax and tariff account for variable costs in NTM, while many NTM have fixed costs of compliance (such as getting a certification) after which effective market access is ensured.

UNCTAD

PROSPERITY FOR ALL

www.unctad.org



UNITED NATIONS
UNCTAD