

**REGIONAL WORKSHOP ON
OPPORTUNITIES AND CHALLENGES IN USING EVIDENCE BASED
TRADE POLICY FOR THE ACHIEVEMENT OF SUSTAINABLE
DEVELOPMENT GOALS
15-17 June 2016, Bhutan**

Session 6

Evidence on trade protection for monitoring SG targets and policy formulation

Agenda

- Scope and issues of trade-policies related indicators for SDGs
- Trade-policy formulation for achieving SDGs
- Finding evidence on trade protection

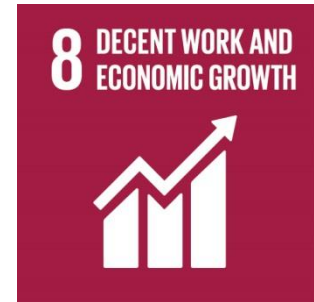
Trade-policies related indicators for monitoring SDGs



Trade protection
and subsidies in
agricultures



ODA



Aid for
Trade

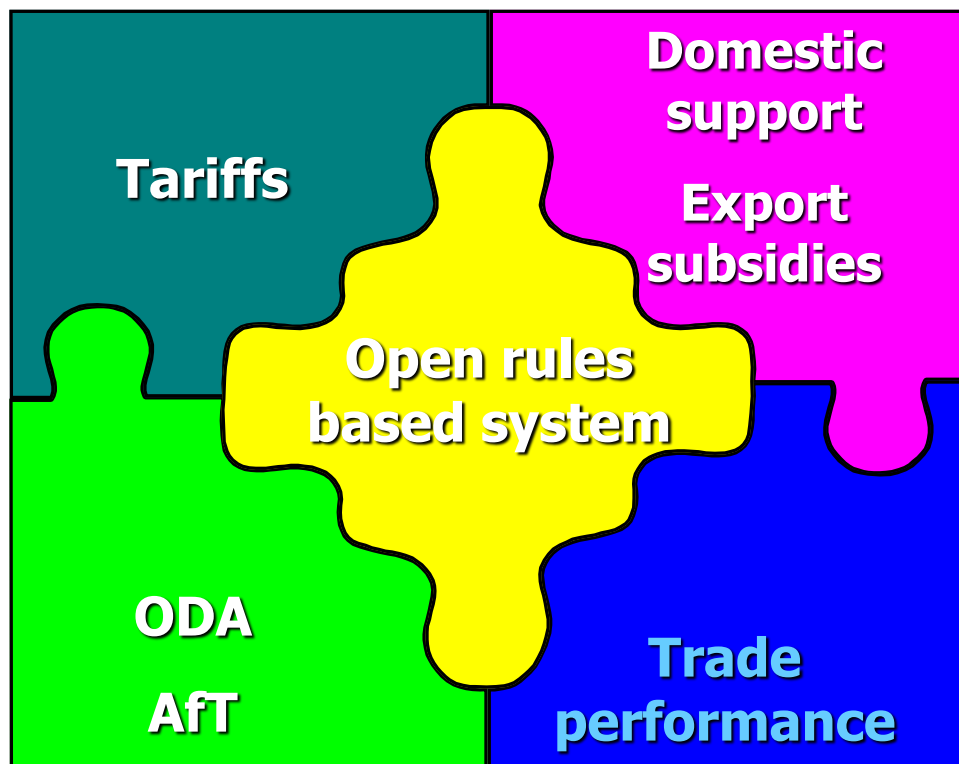


Tariffs faced by LDCs



LDCs' share of global exports
Worldwide tariff-average

Comments



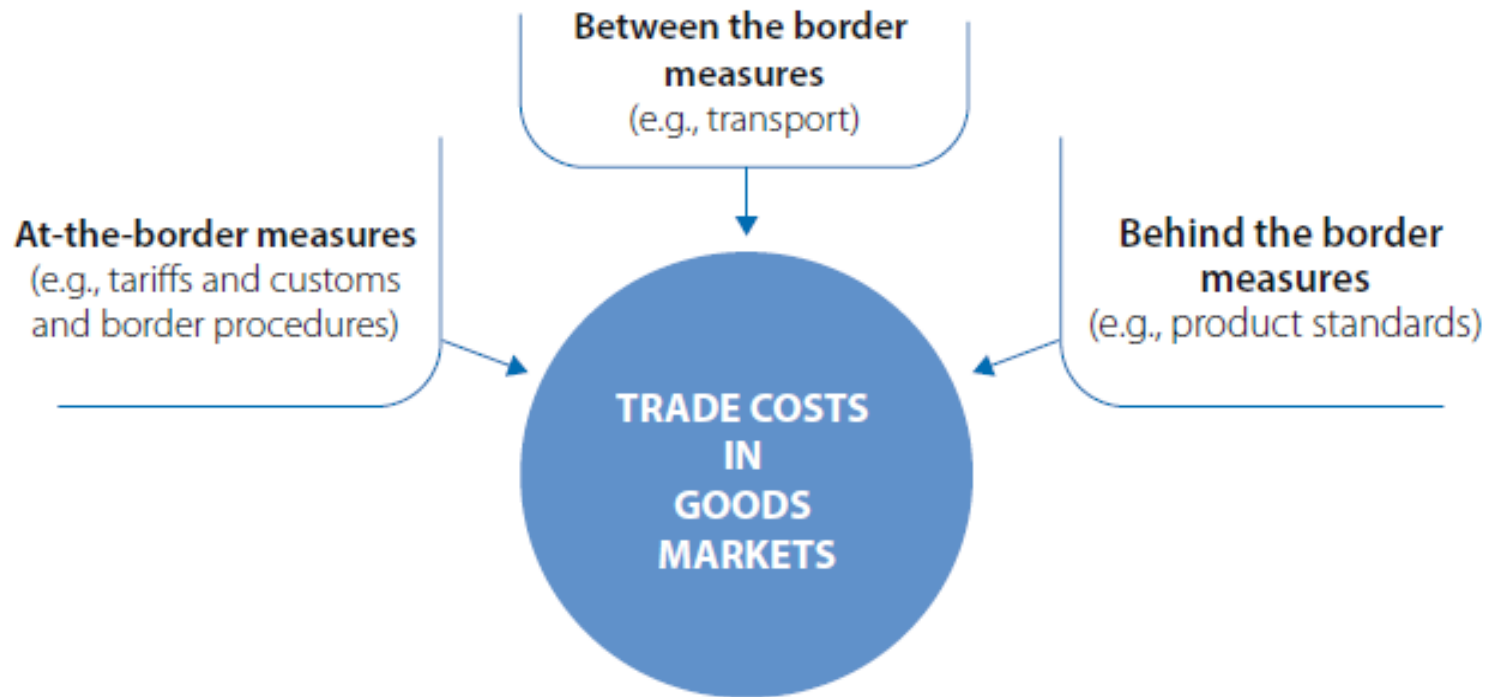
- Focus is on protection faced by LDCs.
- How about protection imposed by LDCs?
- Barriers to trade go beyond tariffs.
- Trade performance is affected by trade policies

Ex. Own tariff burdens on LDC exporters

1. Cost of inputs: tariffs increase price of imported raw materials thus increasing the price of manufacturing using these materials making domestic producers less competitive
2. Cost of living: tariffs lead to higher prices for domestic consumers eventually leading to higher wages for domestic workers (without increasing in their wealth)

Given that trade provide opportunities for development, anything that deters trade is an obstacle for achieving SDGs

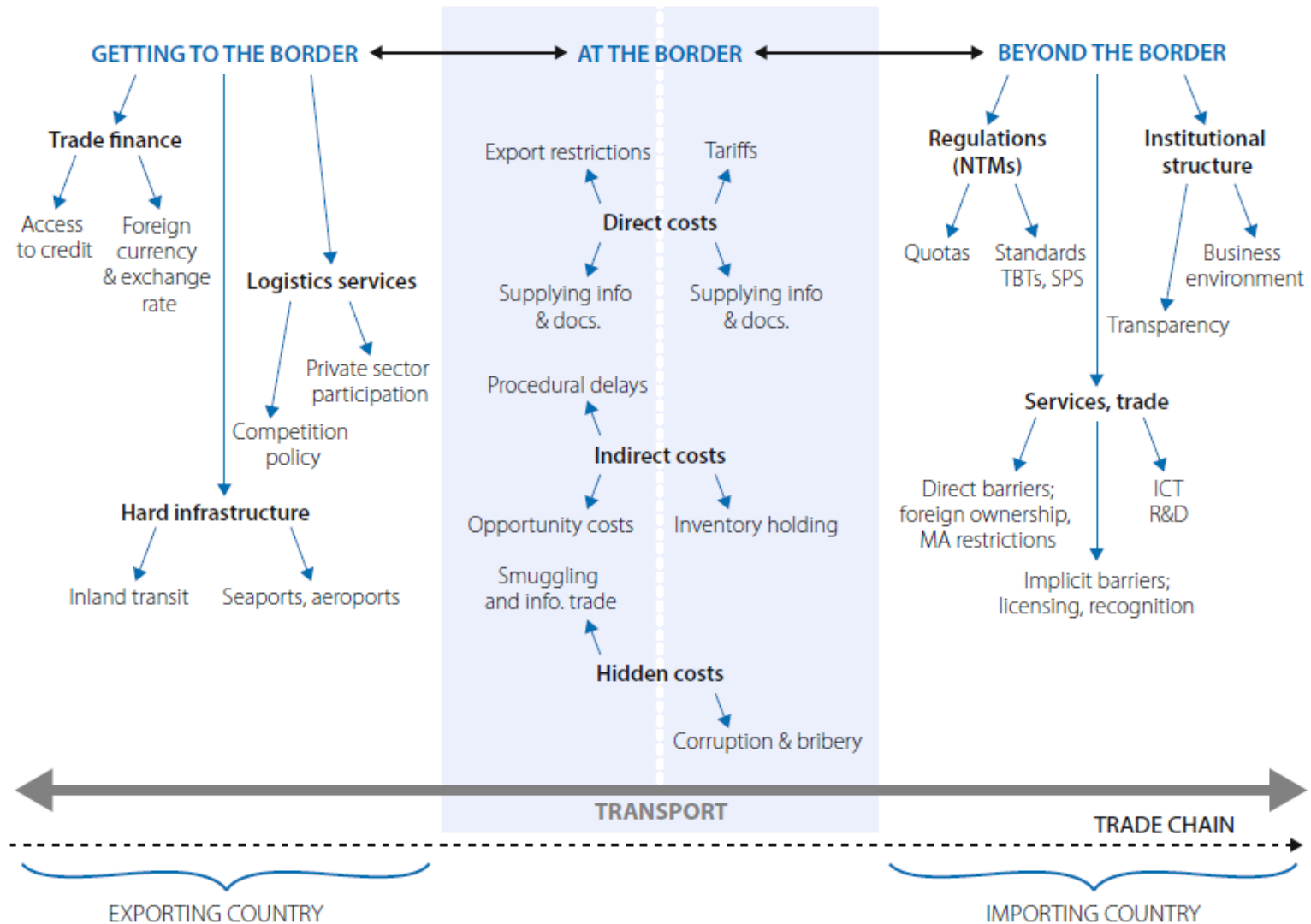
Figure 1.6 Types of trade costs in goods markets



Source: Shepherd 2015.

Policies affect trade costs

Figure 1.8 Policies affecting trade costs in goods markets at all points in the supply chain

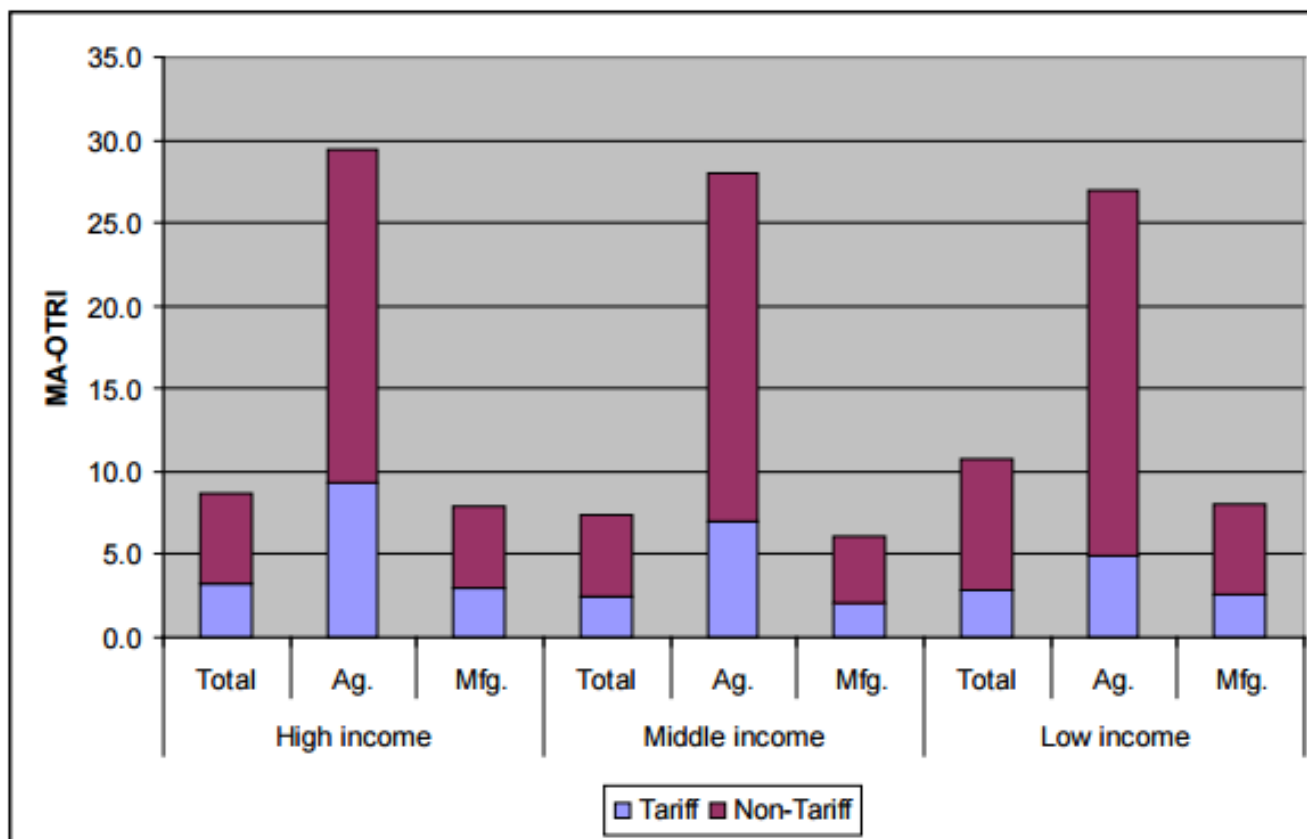


Measuring trade protection

Evidence on trade protection

Two broad categories: tariffs and non-tariff measures (NTMs)

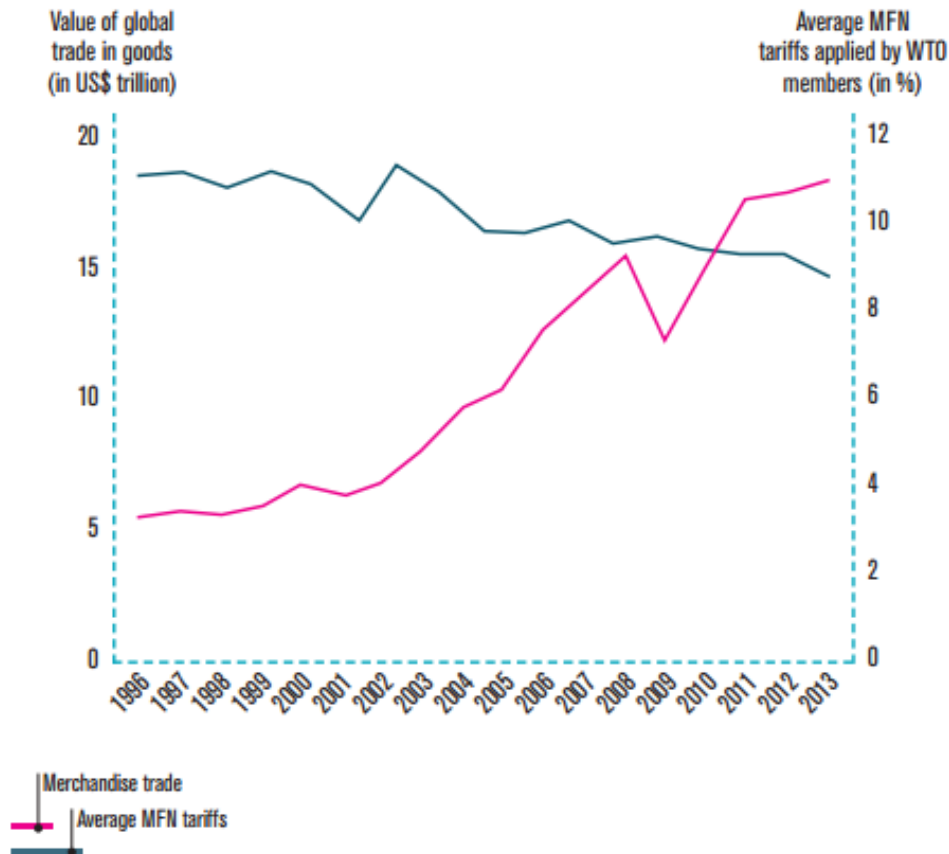
Figure 1: Ad valorem equivalents of non-tariff measures compared to tariffs, by income group and sector (Ag: Agriculture; Mfg: Manufacturing)



Source: United Nations Conference on Trade and Development (UNCTAD), (2012). Non-Tariff Measures to Trade: Economic and Policy Issues for Developing Countries. Developing Countries in International Trade Studies. UNCTAD/DITC/TAB/2012/1. Estimations are based on a methodology developed by Kee, Nicita and Olarreaga (2009).

Evidence on trade protection

Chart 1: Tariffs applied by WTO members and global trade in goods: 1996-2013



Trade grows while tariffs decline.

Source: WTO, World Tariff Profiles

Tariffs

- Definition – tax levied on a good when it crosses a national border
 - import tariff – much more common
 - export tariff – less common; revenue source

Types of tariffs

1. **specific tariff** – fixed monetary amount per unit of the imported good
2. **ad valorem tariff** – fixed percentage of the value of the imported good
 1. **customs valuation** – process of determining the value of an imported good
 2. **free-on-board (FOB) valuation** – tariff applied as product leaves country
 3. **cost-insurance-freight (CIF) valuation** – tariff applied as product enters country
3. **compound tariff** – combines the elements of specific and ad valorem tariffs

A) ad valorem equivalent (AVE) of specific tariffs

- **Ad valorem tariffs** are much more widely used than specific tariffs, because they are easier to aggregate and to compare and are thus more transparent
- One way to compare them, however, is to calculate their **ad valorem equivalent**:

$$\tau_{AVE} = 100 \frac{\tau_{specific}}{p}$$

Where p is the international price per unit of the good

A) ad valorem equivalent (AVE) of specific tariffs

- The challenge is to compute p . It can be calculated by dividing trade values by volumes (to get unit values), but the result often varies across time and countries and systematic biases are likely
 - Since poorer countries export, on average, goods of lower quality and hence price, even if they face the same specific tariff as higher priced exports, their exports face higher protection in AVE terms than these higher priced exports

A) ad valorem equivalent (AVE) of specific tariffs

World Bank WITS proposes four methods to compute unit values in AVE estimation:

Using import unit values for the reporter calculated at the national tariff line level (8-10 digits).

Using only import unit values for OECD countries

Using the methodology for the calculation of AVEs of agricultural non *ad valorem* duties referred to in the draft modalities for agriculture currently under negotiation at the WTO

Using the methodology for the calculation of AVEs of non-agricultural non *ad valorem* duties referred to in the draft modalities for non-agricultural market access currently negotiated at the WTO

Market Access Maps (MACMAP) also calculates AVEs but uses unit values computed as the ratios of values to volumes for five specific reference groups

B) other distinctions

1. Most Favored Nation (MFN) tariff rates vs. preferential tariff rates

- MFN tariffs are the ones that WTO Members commit to accord to imports from all other WTO Members with which they have not signed a preferential agreement
- Preferential tariffs are the ones accorded to imports from preferential partners in FTAs, customs unions or other preferential trade agreements, and are more likely than others to be at zero

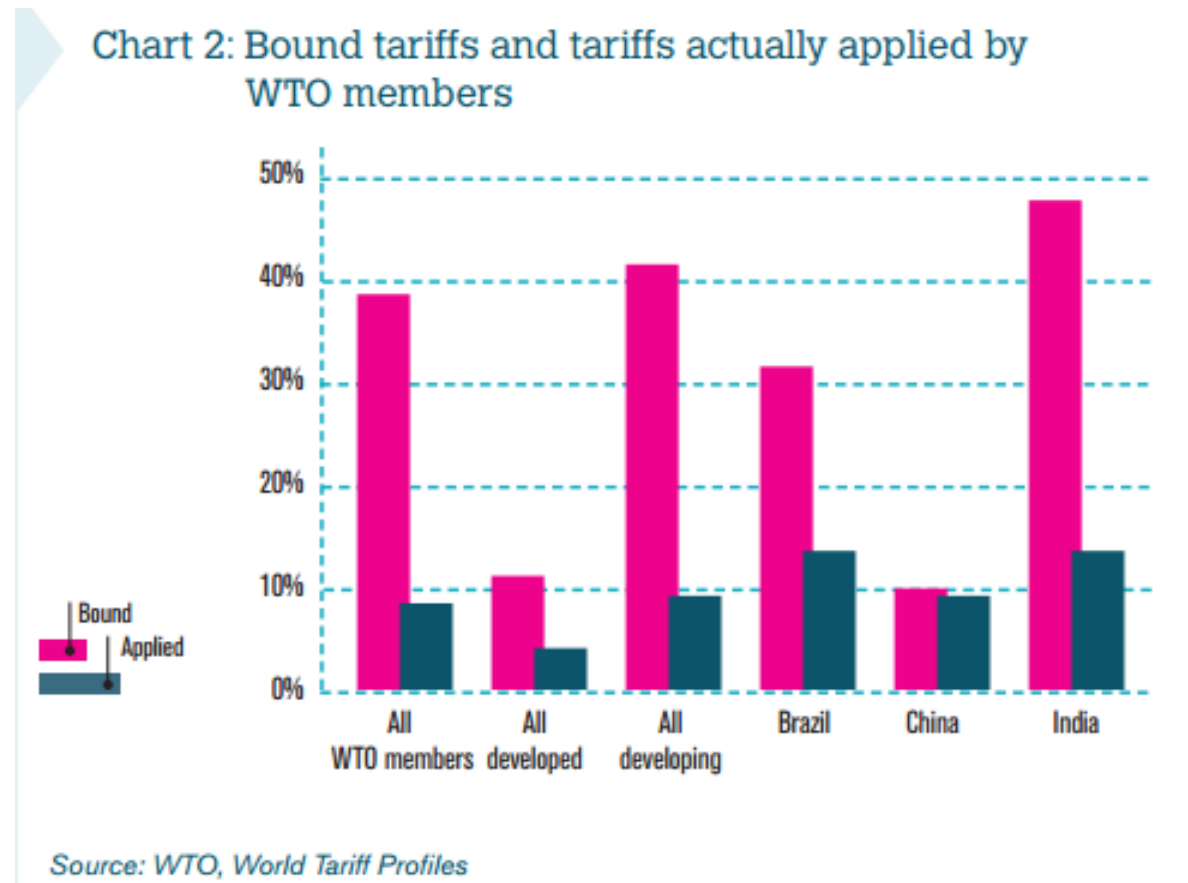
B) other distinctions (ct'd)

2. Bound vs. applied tariff rates

- Bound MFN tariff levels, which are listed in a country's tariff schedule, indicate the upper limit at which the government is committed to set its applied MFN tariff
- For a given tariff line, the bound tariff must thus be higher or equal to the applied MFN tariff
- For developed countries, bound tariffs are typically identical or very close to applied tariffs. For developing countries, however, there is often "water" in the tariff (spread between bound and applied rate, "**binding overhang**")

B) other distinctions (ct'd)

2. Bound vs. applied tariff rates



B) other distinctions (ct'd)

2. Bound vs. applied tariff rates

		Bound	Applied
Agriculture	Developed countries	38	34
	Developing countries	61	25
Non-Agriculture	Developed countries	4	3
	Developing countries	20	13

Source: UNCTAD TRAINS and UNCTAD calculations based on WTO CTS

Specific problems for developing countries:

- Tariff escalation
- Tariff peaks

C) Tariff profiles

1. Average

Tariff schedules are typically defined at the HS 8 (up to HS12) level of disaggregation.

Tariffs can be aggregated in various different ways: by simple averaging or by using some weighting scheme.

Weighted average:

$$\bar{\tau} = \sum_k w_k \tau_k$$

Where w is a weight (usually, product k 's import share)

C) Tariff profiles (ct'd)

1. Average

Drawbacks of each method:

- Simple averages give the same weight to products that are not imported and to products that are imported in large amounts
- Weighted averages systematically under-represent high tariffs

[Kee et al. \(2008\)](#) propose a weighting scheme in which the weights are an increasing function of import shares and elasticities of import demand at the tariff line level

C) Tariff profiles (ct'd)

2. Dispersion

Tariff averages only provide a partial picture of a given tariff structure.

The dispersion of tariffs around the mean also matters from an economic point of view: in general, **the higher the dispersion, the more distortion.**

Dispersion can be visualized with a histogram or density estimation.

C) Tariff profiles (ct'd)

2. Dispersion

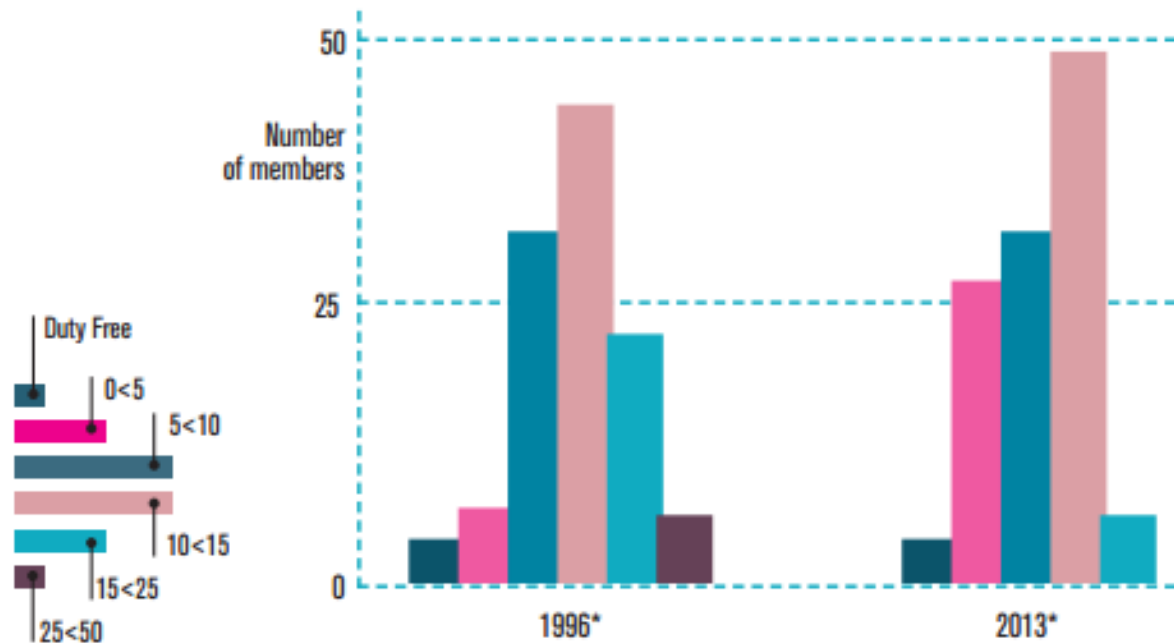
Other options include the standard deviation σ :

$$\sigma = \sqrt{\frac{1}{K} \sum_k (\tau_k - \bar{\tau})^2}$$

- Or the coefficient of variation (standard deviation/tariff mean)
- Or the proportion of **tariff peaks**:
 - Share of tariff items subject to duties higher than 15%
 - Share of tariff items subject to duties larger than three times the national average

C) Tariff profiles (ct'd)

Chart 3: Range of tariffs applied by WTO members



Source: WTO, World Tariff Profiles.

* or closest available year with data

D) Effective protection and tariff escalation

- A tariff provides protection from imports by import-competing producers to raise the price and the production
- However, domestic producers may be using imported inputs which might be subject to tariffs
- Such tariffs on imported inputs would raise the costs of domestic producers and lower their output

D) Effective protection and tariff escalation (ct'd)

- If one is interested in the net “protective” effect of tariffs on producers in a particular sector, all tariffs need to be taken into account
- The effective rate of protection (ERP) measures the net protective effect of the whole tariff structure on domestic producers in a particular sector

$$ERP_k = \frac{\tau_k p_k^* - \sum_l a_{lk} \tau_l p_l^*}{p_k^* - \sum_l a_{lk} p_l^*}$$

Where k indexes final products, l indexes intermediate inputs and p^ are world prices*

D) Effective protection and tariff escalation (ct'd)

- In ERP formula, a is the value of input l used in the production of one unit of k (input-output coefficient)
- From IO tables, or, aggregated at 3-digit, from TPP database
- ERP can be negative, even when the import tariff on the final good is positive, because of protection on inputs

ERP: Illustrative calculations

	Domestic sales	Export to preferential market	Export to world market
Value of a shirt			
At world price	100	100	100
At domestic/applicable price	115	105	100
<i>NRP on shirts (%)</i>	<i>15.0</i>	<i>5.0</i>	<i>0.0</i>
Value of fabric used			
At world price	60	60	60
At domestic/applicable price	66	66	66
<i>NRP on fabric (%)</i>	<i>10.0</i>	<i>10.0</i>	<i>10.0</i>
Value added			
At world price	40	40	40
At domestic/applicable price	49	39	34
<i>ERP (%)</i>	<i>22.5</i>	<i>-2.5</i>	<i>-15.0</i>

Non-tariff measures

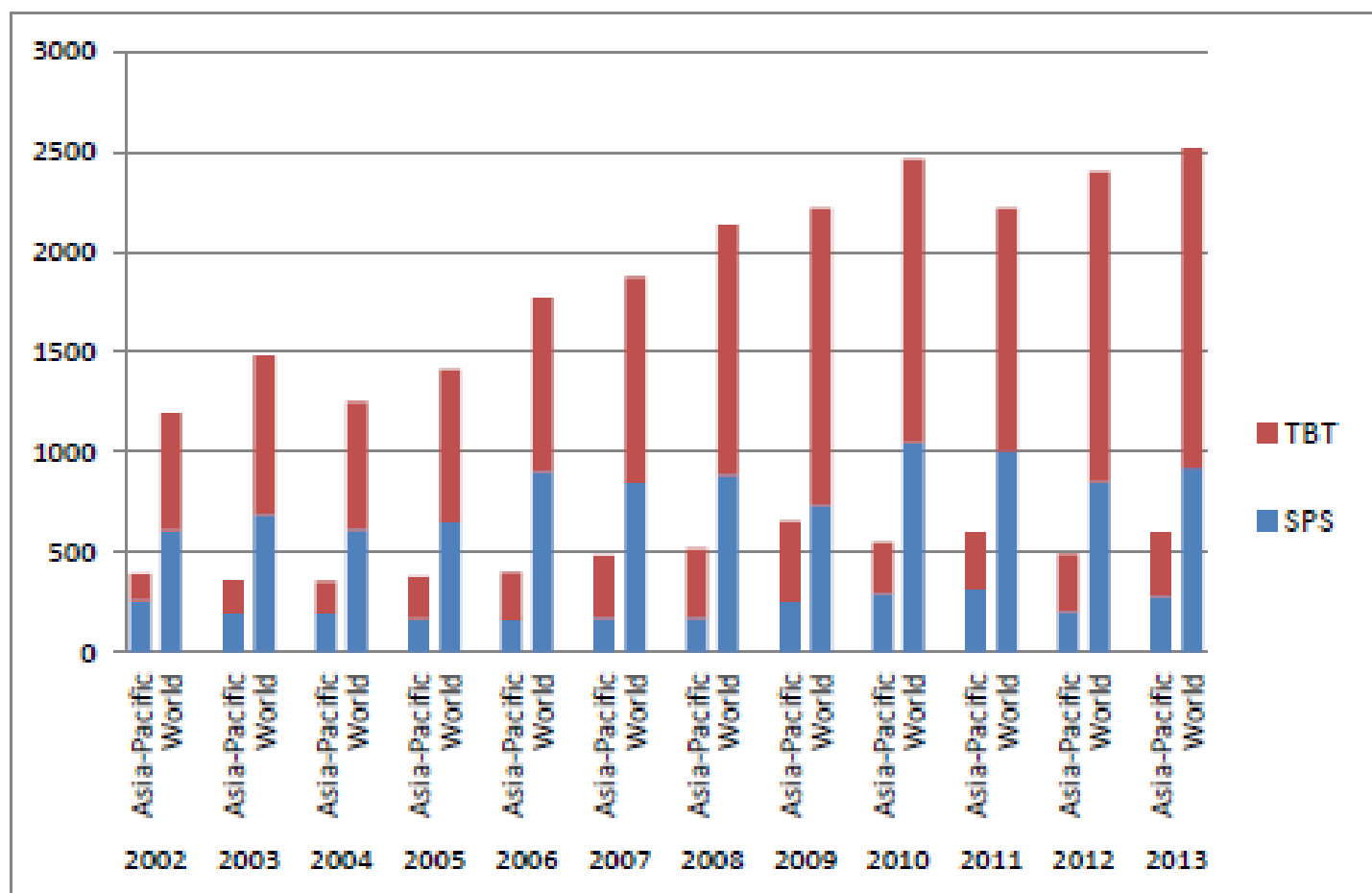
NTMs are policy measures, other than ordinary customs tariffs, that affect international trade in goods at the border by changing quantities traded, prices, or both

International classification of NTMs

A	Sanitary and phytosanitary measures
B	Technical barriers to trade
C	Pre-shipment inspection and other formalities
D	Price control measures
E	Licences, quotas, prohibitions and other quantity control measures
F	Charges, taxes and other para-tariff measures
G	Finance measures
H	Anti-competitive measures
I	Trade-related investment measures
J	Distribution restrictions*
K	Restrictions on post-sales services*
L	Subsidies (excluding export subsidies)*
M	Government procurement restrictions*
N	Intellectual property*
O	Rules of origin*
P	Export related measures*

Non-tariff measures (ct'd)

Figure 1.4: Growing numbers of initiated TBT and SPS measures



Source: ESCAP calculations based on data from WTO I-TIP Database. Accessed March 2015.

Non-tariff measures (ct'd)

- While NTMs are generally thought of as depressing trade volumes by raising costs, there may be occasions where they actually serve to boost trade.
- For example, when well-defined product standards are available, developing country exporters may be able to efficiently prove that their products are of sufficient quality and thereby gain market access which otherwise might have been impeded by reputational effects.
- To determine whether a particular regulation is an NTB or an NTM requires deep analysis of why it was introduced and what its impacts are for traders seeking market access.

A) Quantification of NTMs

1. Price-gap approach

- Aims at deriving a tariff/tax equivalent to the NTM
- Calculates the ad valorem equivalent of NTM, i.e. the ad valorem tariff rate that would induce the same level of imports as the NTM in question

$$TE_{NTM} = p - p^* - (c + \tau)$$

Where p is the domestic price, p^ the world price, c is transport costs and τ is custom duties*

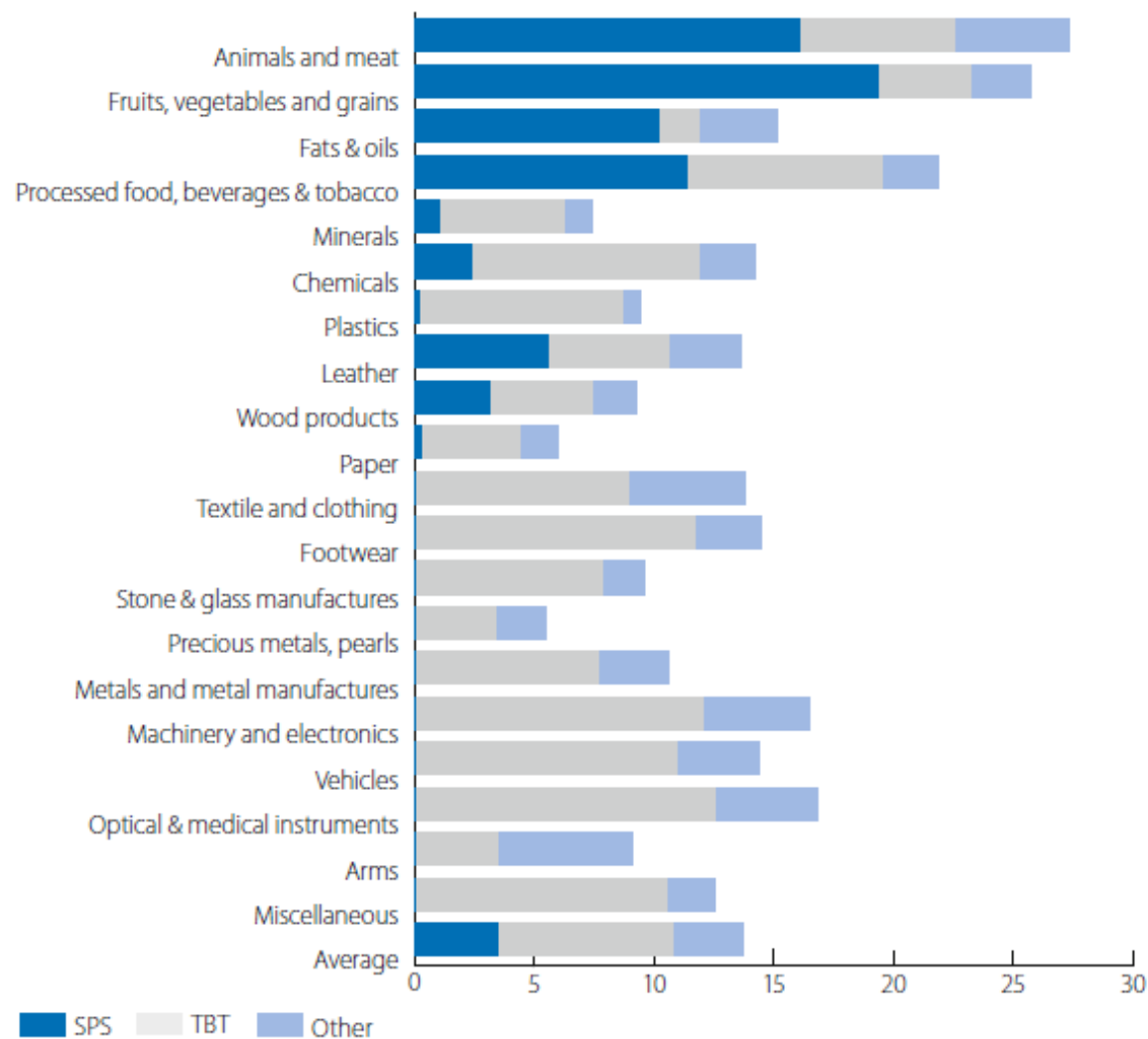
A) Quantification of NTMs (ct'd)

1. Price-gap approach


- Price gap is a very simple concept which, however, can be difficult to implement
- Difficulties in its implementation come from the variety of ways of calculating internal and external prices, which give rise to widely divergent estimates

A) Quantification of NTMs (ct'd)

Figure 9.4 Ad valorem equivalents of SPS, TBT and other NTMs, by sector



Source: Cadot et al. (2015).

StatLink  <http://dx.doi.org/10.1787/888933241585>

A) Quantification of NTMs (ct'd)

2. Inventory-based frequency measures

- Frequency ratio is the share of tariff lines in a certain product category subject to selected NTMs
- Coverage ratio is the share of imports of a certain category of products subject to NTMs

A) Quantification of NTMs (ct'd)

2. Inventory-based frequency measures

Potential drawbacks:

- The stiffness of the NTM is not taken into account
- Bias: a prohibitive quota reducing imports of a certain category of goods to a very low level mechanically reduces the category's share in total imports, resulting in a low coverage ratio
- Frequency indexes give the same weight to products that are not imported and to products that are imported in large amounts
- NTM inventories may be incomplete and their coverage of measures may differ across measures and countries

A) Quantification of NTMs (ct'd)

Coverage ratio: illustrative calculation

HS code	Import value (US\$ 1000)	Import share (%)	NTB	Description
87	58'827'533			Vehicles other than railway or tramway rolling stock
8701	1'975'665	3.36	0	Tractors (other than tractors of heading 87.09).
8702	264'003	0.45	0	Motor vehicles for the transport of ten or more persons, including the driv ...
8703	18'400'000	31.28	1	Motor cars and other motor vehicles principally designed for the transport ...
8704	5'658'077	9.62	0	Motor vehicles for the transport of goods.
8705	418'058	0.71	0	Special purpose motor vehicles, other than those principally designed for t ...
8706	435'047	0.74	0	Chassis fitted with engines, for the motor vehicles of headings 87.01 to 87 ...
8707	172'346	0.29	0	Bodies (including cabs), for the motor vehicles of headings 87.01 to 87.05. ...
8708	28'600'000	48.62	0	Parts and accessories of the motor vehicles of headings 87.01 to 87.05.
8709	211'767	0.36	0	Works trucks, self-propelled, not fitted with lifting or handling equipment ...
8710	622'752	1.06	0	Tanks and other armoured fighting vehicles, motorised
8711	628'913	1.07	1	Motorcycles (including mopeds) and cycles fitted with an auxiliary motor
8712	62'290	0.11	0	Bicycles and other cycles (including delivery tricycles), not motorised.
8713	54'315	0.09	0	Carriages for disabled persons
8714	363'429	0.62	0	Parts and accessories of vehicles of headings 87.11 to 87.13.
8715	28'653	0.05	0	Baby carriages and parts thereof.
8716	932'218	1.58	0	Trailers and semi-trailers
HS 87 Cov. ratio (%)			32.35	

- As illustrated, **the coverage ratio is equal to 32.35%** (share of imports of HS code 87 subject to NTM in total imports of HS code 87)
- **The frequency index** would be equal to $2/16 = 0.125$, i.e. **12.5%**

A) Quantification of NTMs (ct'd)

Table 2.2: Frequency indices across economic sectors

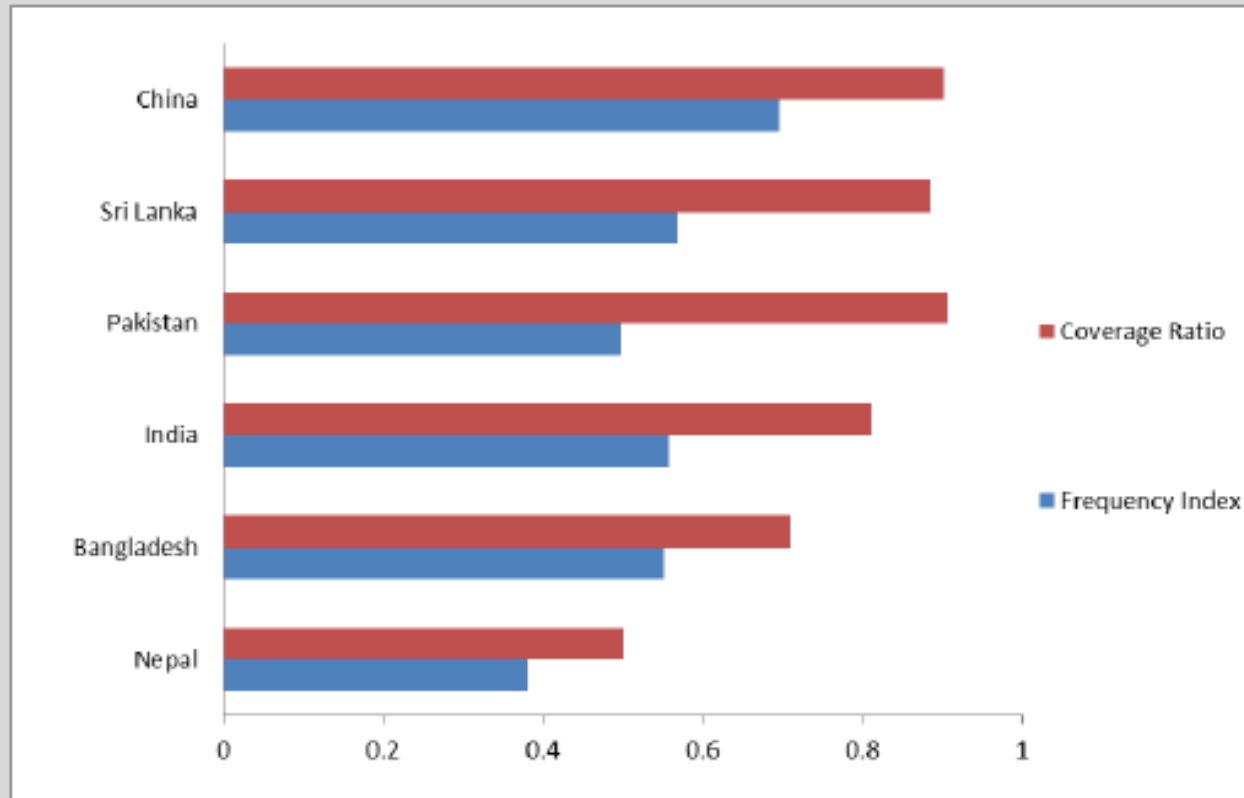
(percentage share of products with at least one NTM)

	SPS	TBT	C: Pre- Shipment	D: Contingent	E: Quantity control
Live animals	67.9	29.7	6.1	1.4	6.7
Vegetable products	68.9	31.6	6.5	1	5
Fats and Oil	61	51	10.4	1.6	5.3
Processed food	65	56.9	12.1	1.6	8.6
Minerals products	5.5	27.3	3.4	1.3	2.7
Chemical products	8.8	45.6	5.7	1.5	3
Rubber and Plastics	4.5	49.8	6.4	1.4	2.7
Raw hide and skins	15.7	18.4	3.7	0.6	12
Wood	14.9	16.5	3.9	0.6	0.7
Paper	3.4	27.6	6	1.4	3.1
Textile	3.6	47.1	13.4	1	14.8
Footwear	2.2	44.4	7.5	1.1	3
Stone and Cement	4.3	29.3	5.4	1.1	1.5
Base Metals	4.2	35.3	11.1	1.5	8.8
Machinery Electrical Equipment	5.7	36.5	6.3	1.2	4.8
Motor Vehicles	2.4	42.5	6.3	1.7	8.7
Optical and Medicals instruments	2.2	35.6	9.7	1.2	2.6
Miscellaneous goods	4.1	31.6	5.7	2.1	2

Source: Cadot and others, 2014.

As countries become wealthier, the degree of regulation in the economy increases

Figure 2.3: Coverage ratios and frequency indexes in selected Asia-Pacific economies



Source: CEPII, 2014.

Data for trade policy analysis

A. Tariff data

- WTO integrated database (IDB) and Consolidated Tariff Schedules database (CTS): MFN applied tariffs and imports of WTO Members at the tariff-line level which often means 8 digits, sometimes even 10 digits, starting in 1996
 - WTO Tariff Analysis Online ([TAO](#))
- WITS provides access to five trade and tariffs databases:
 - The WTO's IDB and CTS databases
 - UN Comtrade
 - UNCTAD's TRAINS database
 - CEPII and IFPRI's [MAcMap](#) database (see [Boüet et al., 2005](#))
 - [AMAD](#) (Agricultural Market Access Database)

Data for trade policy analysis

B. NTM data

- WITS (21 countries, 19 developing + EU and Japan)
- MACMAP
- World Bank Temporary Trade Barriers [Database](#)
- AMAD (also data on tariff-quotas)
- TPP database
- World Bank TBT [database](#)
- [Data](#) on ad-valorem equivalents of NTMs from [Kee et al. \(2009\)](#), Cadot, et al. (2015)
- WTO databases
 - [SPS](#)
 - [TBT](#) (and also this [database](#) on Specific Trade Concerns)
 - [Subsidies](#)

Thank you

Q&A