



The environment and Trade Regimes are on a crash course: What to do about it

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Outline (1)

- The Collision Course
 - Population share and contribution to CO2 emissions now
 - ...and predictions for 2050
 - Financing transfer by Carbon tax —Chancel/Piketty (tax by per capita emission)
 - Tax burden by region
- Why it is important to follow Trade negotiations –Perfect Global Public Good
 - Establish Communication between Climate (UNFCCC) and Trade (WTO) Regimes
 - Deal with nuts and bolts: Recognize implications of embedded carbon in trade
- From the Doha Elusion to the EGA delusion
 - Motivation for successful (i.e. ambitious) negotiations
 - From Doha disagreements (2003) to the current EGA stall
 - DOHA/EGA negotiations as barometer for climate-related measures
 - Elusive triple win: Doha (2001)-EGA (2014-?)
 - Why non-participation by developing countries in negotiations.

Outline (2)

- Expectations from current EGA negotiations: What is on the Table
 - Applied tariffs by income groups and EG lists
 - Exports by income group
 - Mercantilism at work (1)....only goods with $RCA > 1$
 - Mercantilism at work (2).... Insignificant tariff peaks
 - Implementation Challenges to concretize significant gains

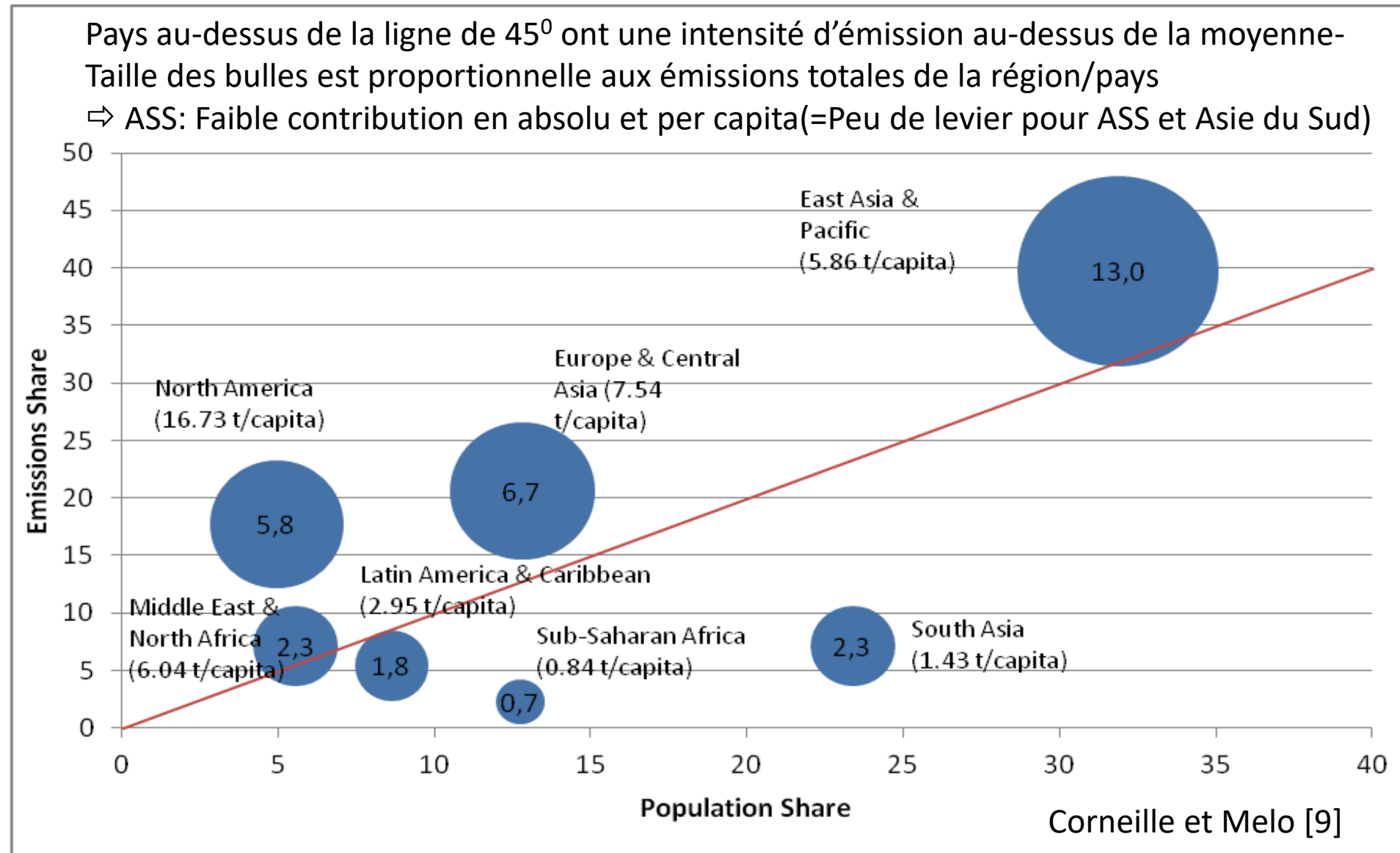
- What needs to be done to conclude a meaningful EGA
 - Extend list (EPP)
 - Include Environmental Services (ESs)
 - Include NTBs (with NTM/NTB classification for distinction)
 -and harmonize standards (recent supporting results)

Outline (3)

- ... and keep dreaming until a 'real visible' disaster, the prerequisite to reform the WTO
 - WTO in progress (haha!)-- (« Greening the GATT» Esty(1994))
 - Shift the WTO from a 'negative' to a 'positive' contract
 - The WTO right now
 - What members can and cannot do now (1)
 - What members can and cannot do now (2)
 - Climate Clubs à la Nordhaus

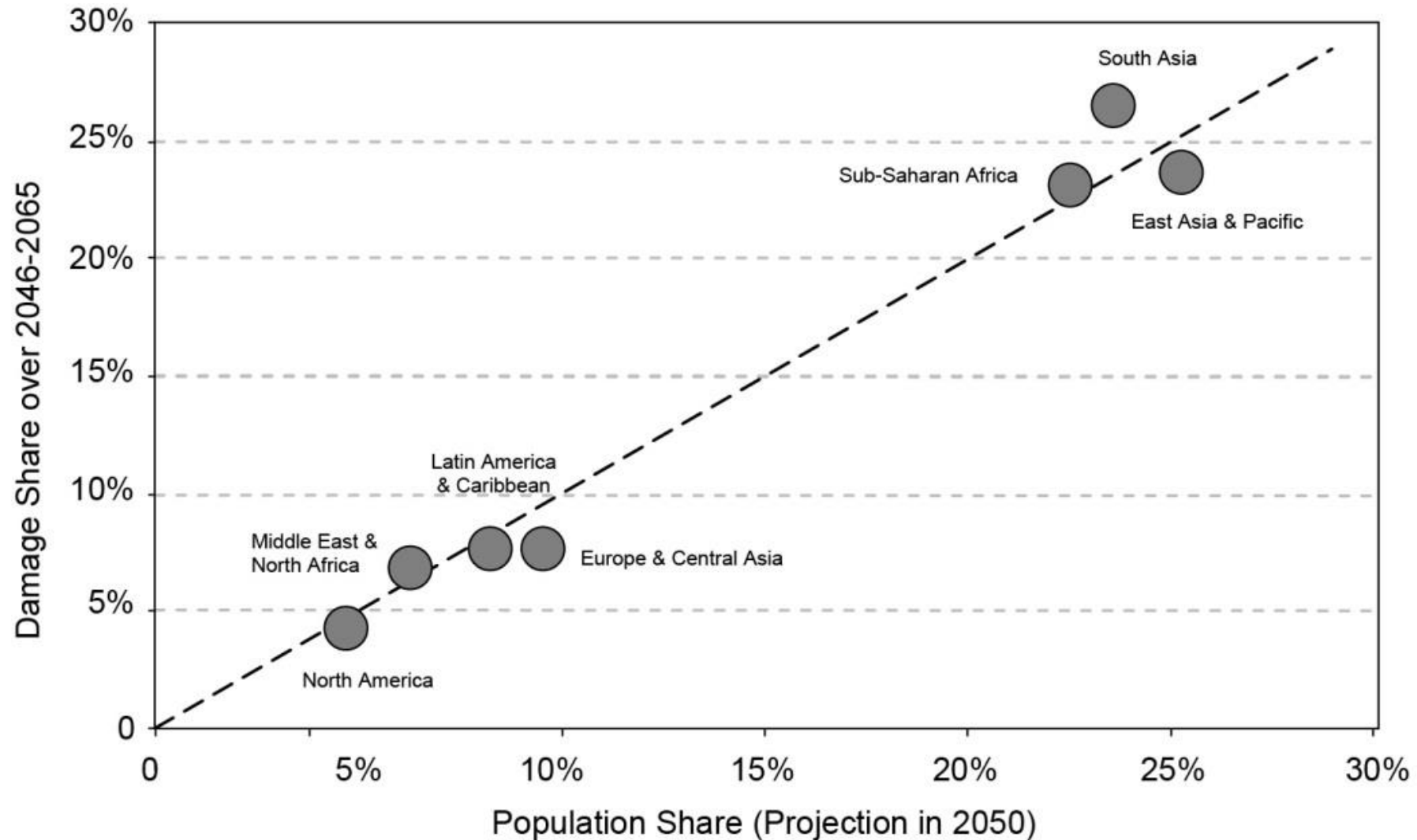
The Collision Course

Emissions de CO₂ (combustions de fossiles et ciment) Gt et t/capita en 2011



Dommmages Potentiels (prévisions à 2050)

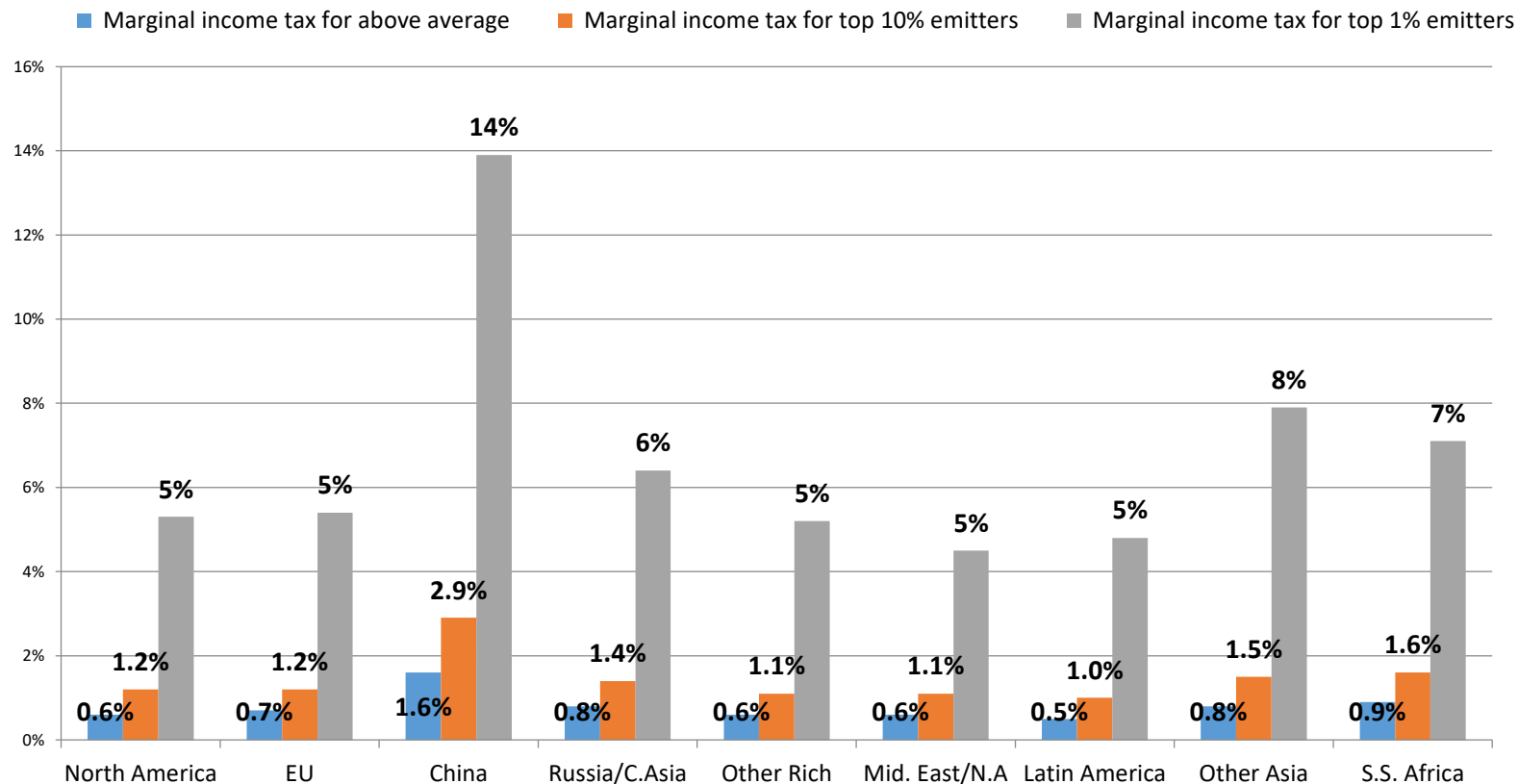
Parts des dommages au-dessus de la moyenne pour ASS et Asie du Sud



Financement de l'adaptation: Prélèvement par une taxe (1)

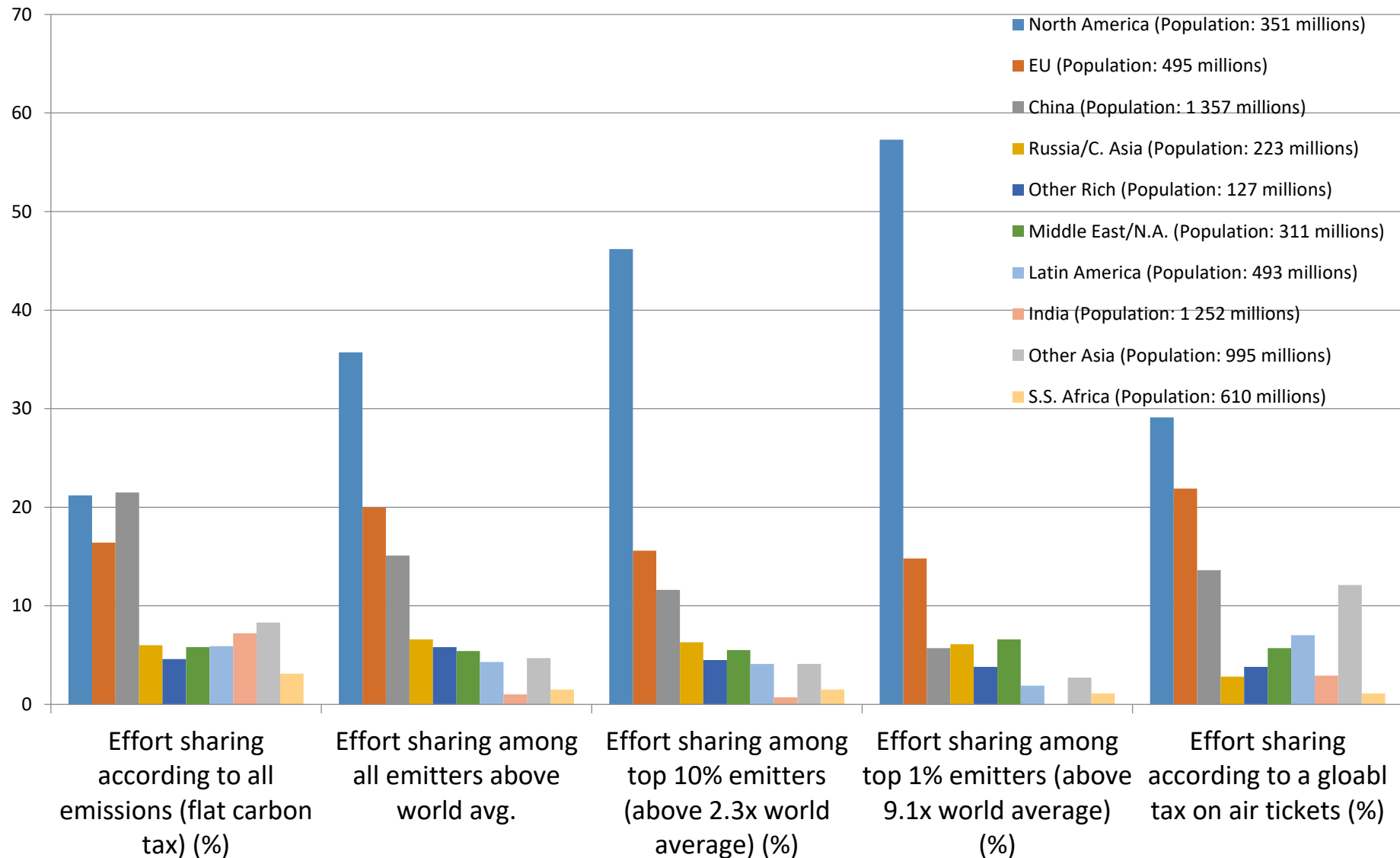
(0.2% du pib mondial ≈\$ 150milliards annuels (3X montant fonds annuel du vert)

Impôt marginal sur le revenu pour ceux qui seraient taxés



Source: « Carbon and Inequality: from Kyoto to Paris » Chancel and Piketty (2015, table 10) [6]

Répartition de la charge fiscale par région (2)



Source: « Carbon and Inequality: from Kyoto to Paris » Chancel and Piketty (2015, table 11) [6]

Why it is important to follow Trade negotiations

(climate is the quintessential Global Public Good. Useful to see how trade relations affect climate and free-riding)

1. Establish Communication between Climate (UNFCCC) and Trade (WTO) Regimes

- Address legal overlap between climate and trade regime. Develop/implement MRV (Monitoring, reporting, verification) to check on progress in implementing NDCs (nationally determined contributions submitted at COP21) [20]. Easier yet more difficult to do on trade than on other climate-related externalities. [19]

WTO [14] [16] [17]

- Require that WTO agree to be bound by judgments in any climate dispute settlement mechanism (DSM) ----DSM for climate compliance to be established).
- Put a “Peace clause” (say 3 years) for climate action. WTO members would be requested to wait before challenging national climate measures (say wait to challenge a Border tax adjustment measure) [14]

2. Deal with nuts and bolts: Recognize implications of embedded carbon in trade

- Average leakage rate $\approx 12\%$: Border carbon adjustment for energy-intensive trade-exposed sectors (aluminium, steel, cement,...) cuts leakage rate by $1/3$.
- Outdated classifications for Goods and Services. Reform HS system at WCO to better distinguish EGs (in progress via HS revisions); Reform classification of ESs (only 4/155 Service subsectors classified as ESs). See [23]
- WTO, UNFCCC : establish an agreed common international standard for calculating the amount of carbon in making traded products
- Re-establish distinction 'good'- 'bad' subsidies; Re-instate green subsidies.
- Compulsory monitoring of fossil fuel subsidies (equivalent to current TPRM)

From the Doha Elusion to the EGA delusion

Motivation for successful (i.e. ambitious) negotiations

Conclusion on importance of Triple win

- \Rightarrow Lower barriers to trade in Environmental Goods (EGs) expected to lead to increased trade in EGs , and to lower per capita GHG emissions (see evidence below)
- Success: Key ingredient for transition to green development path
- Success: key to prevent collision of WTS and climate regime
- ..but Outcome so far: Wrangling over negotiations for nearly 20 years [23]

Evidence on importance of trade in EGs

- Decomposition of sources of SO₂ emissions and of importance of trade [11] [12]
- Evidence of weak pollution haven effects [2] [13]
- Evidence on Strict environmental policies are positively associated with $RCA > 1$ in EGs.
- Identification via policy changes (e.g. KP). Environmental policies affect trade flows [1]
- RTAs with environmental provisions have better outcomes on emissions [5]
- Emissions gap for GHGs emissions per capita smaller for countries that engage in bilateral trade in EGs [5]

DOHA/EGA negotiations as barometer for climate-related measures

Three requirements not fulfilled by KP (of which two (MRV and effort) are still in limbo after Paris Agreement (Treaty in November 2016) [20]

- Obtain full participation (KP was « deep and shallow » though all participated in PA)
- Parties to Agreement need to comply to their pledges (MRV)
- Incorporate obligations that demand that countries change their behavior substantially

How Could negotiations fulfill these three requirements (A plurilateral agreement (PA)?)

- A few more countries (17+) will participate to cover 90% of world trade in EGs, then reductions negotiated extended to all WTO members [21]
- MFN +NT+DSP implies pledges will be fulfilled
- Will countries undertake obligations that substantially change their behavior? Depends on negotiations being extended to NTBs and to ESs [21]

From Doha disagreements (2003) to the current EGA stall

- Doha: Elusive triple win: (2001)-EGA 2014- (next slide)
- Literature suggests superior environmental outcomes for countries that trade in Environmental Goods (EGs) (following slides)
- Reasons for non-participation in negotiations by developing countries. [22]
- Patterns of trade and trade measures (tariffs & NTBs) help show reasons for non-participation by developing countries in Doha/EGA: Sample (47 +EU) countries
 - 2 EG lists (APEC(54) and EPP(106))
 - Sample leads to 4 income groups : HIC(10), UMIC(14), LMIC(16), LIC (10))

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

Expected Triple win

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

The reality of negotiations at Doha

■ Reduction/elimination of barriers to trade in EGs

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

\Rightarrow 18 years of wrangling at Doha/EGA \Rightarrow Only tariffs on agenda [23]

■ NTBs left off agenda

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

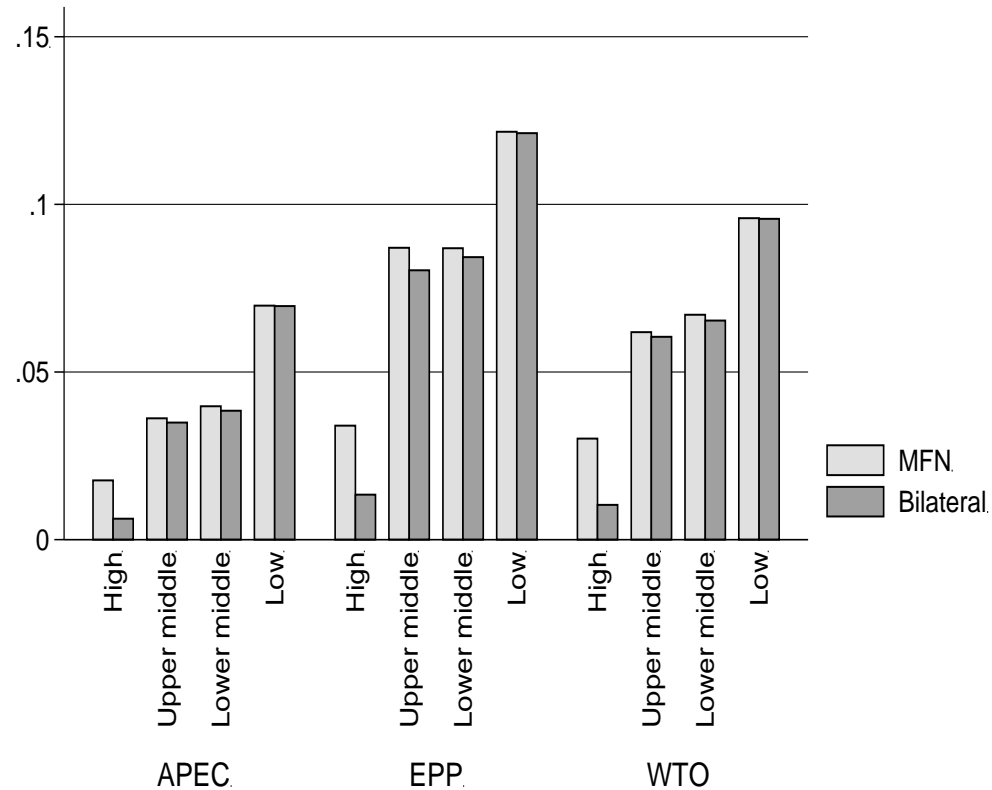
\Rightarrow A minima agenda at Doha, APEC, and EGA negotiations (2014-)

Why non-participation by developing countries in negotiations (Doha/EGA).

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
 1. 'Grow up first, clean up later' (get a large home market after environmental regulations create a market for EGs)
 2. Stay on sidelines: small stakes (low tariffs of HICs \Rightarrow little market access) + avoid dealing with 'like products' and PPMs at WTO

Expectations from EGA (currently stalled) negotiations:
What is on the Table

Applied Tariffs by lists and groups

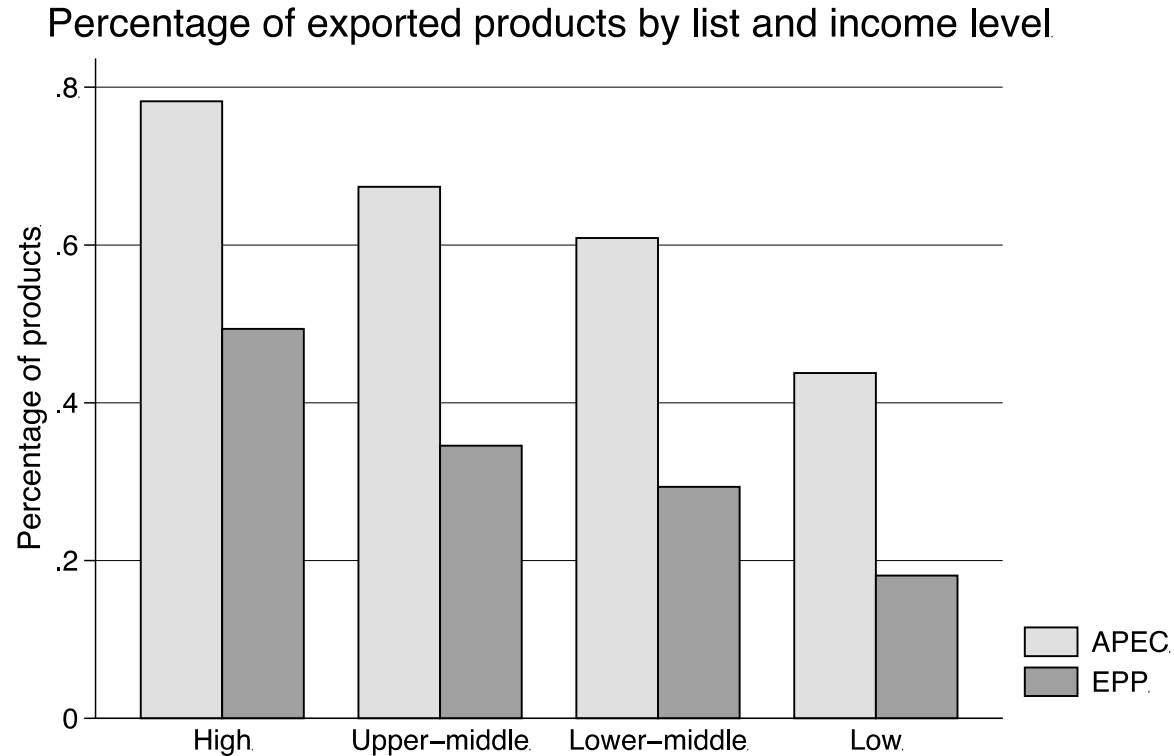


Patterns

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

Source: Melo and Solleder [23]

Exports by EG list



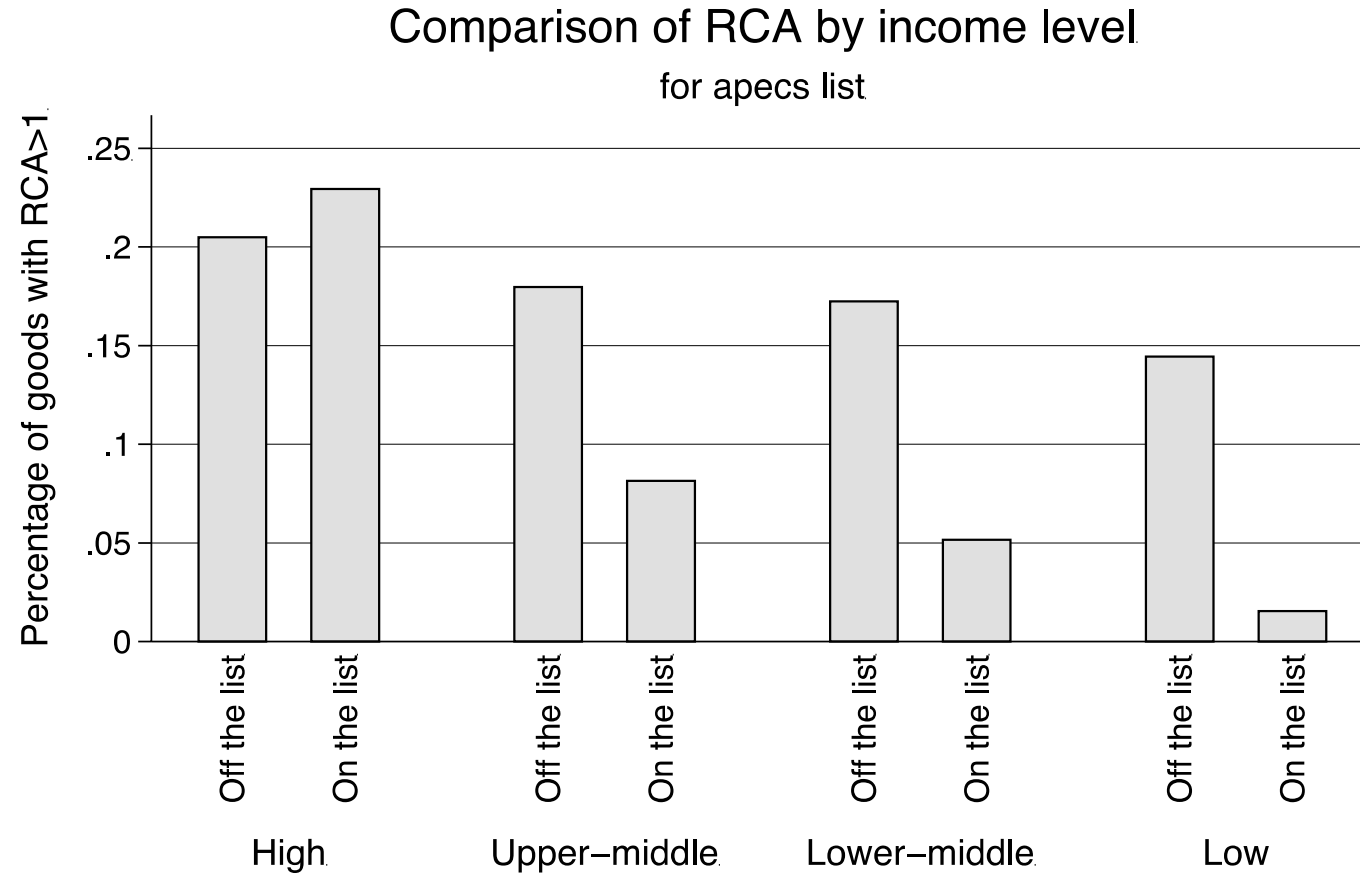
Source: Melo and Solleder [23]

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.

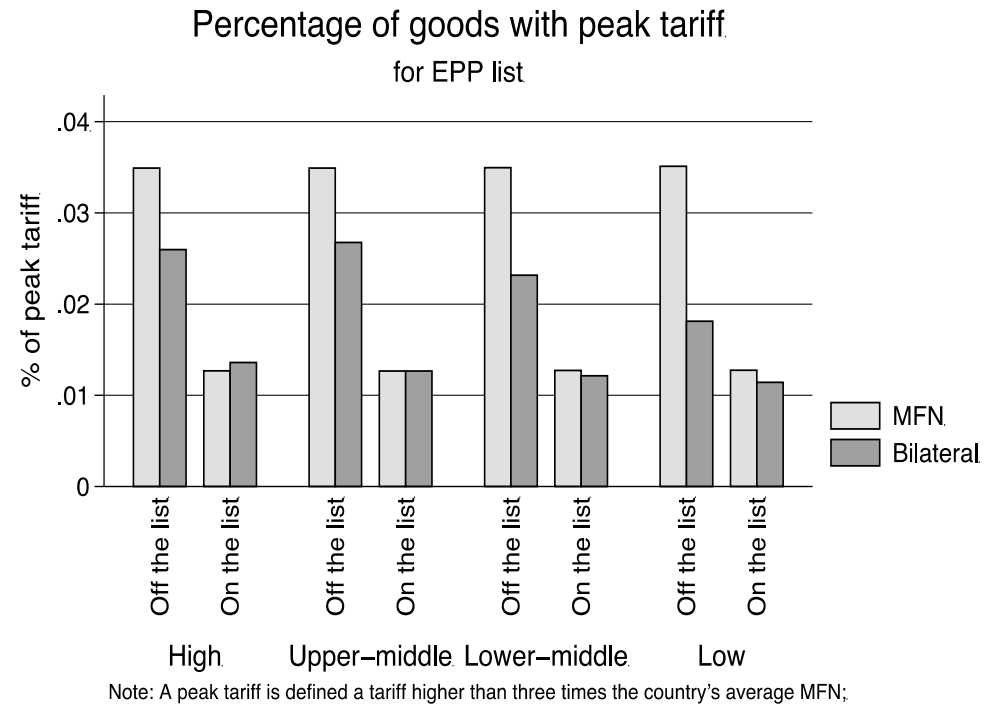
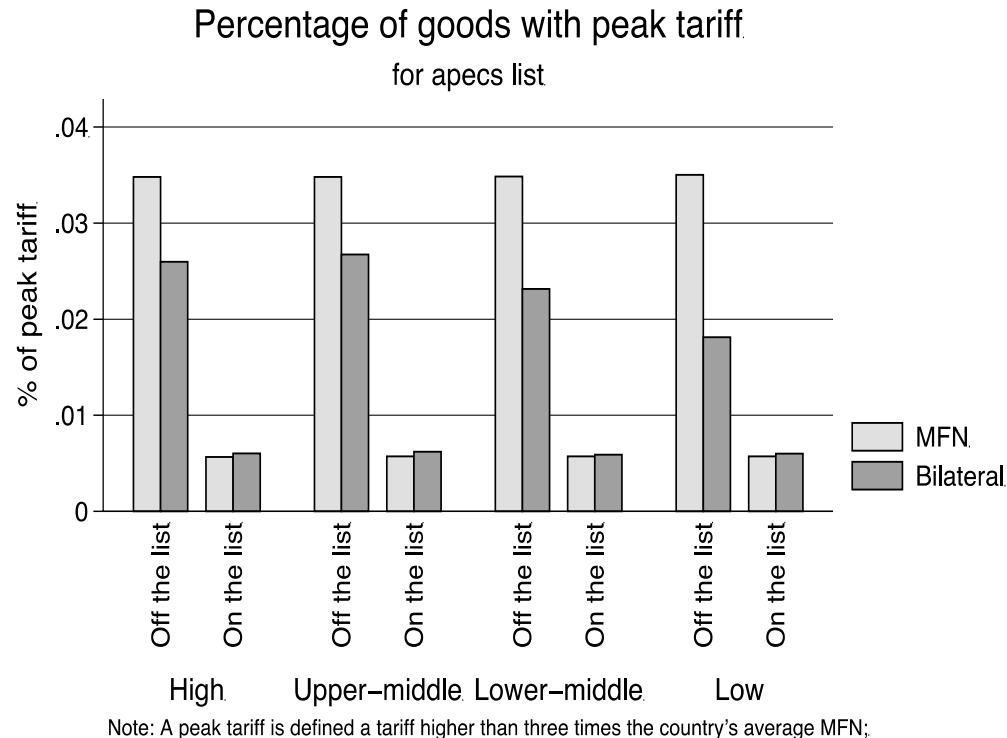
Mercantilism at work (1)

- For APEC list, probability of $RCA > 1$ larger for goods on list, but only for HICs those who made up the list



Mercantilism at work (2)

- Insignificant tariff peaks on both lists and tariff peaks excluded from submission lists [3]
- ...but less peaks on EPP list (difference reflecting APEC list concentrates on intermediate goods)



- Conclusion: Not much on the negotiating table

Implementation Challenges to concretize significant gains

1. Dealing with “ex-outs” (description which needs to be matched with NTLs by customs administrations to identify, within an HS-6 line, the EG that will benefit from the tariff reduction)
2. Reducing uncertainty on duty applied to EGs through trade facilitation
3. Addressing non-tariff barriers (not on agenda)
4. Reducing barriers to trade in environmental services (not on agenda)

2. Reducing uncertainty on duties applied to EGs through trade facilitation

- Inconsistent decisions on tariff classification depending on, for example, the customs office or the rotating allocation of officers → uncertainty in the entire trade transaction.
- Implementing the WTO Trade Facilitation Agreement (TFA) should reduce uncertainty and increase predictability, consistency, and transparency for traders:
 - Publication and availability of information (Art. 1): e.g. publishing on the internet rates of duty and taxes; rules for the classification of goods for custom purpose.
 - Advance rulings (Art. 3): binding decision by customs, at the request of the trader, on the tariff classification of the good (and other characteristics such as origin, custom valuation).
- Ex.: Advance rulings
 1. binding commitment that the good will be classified as an EG in NTL (particularly important for “ex-outs”) and thus, benefit from tariff reduction;
 2. reduce disputes with the customs authority on tariff headings at the moment of release or clearance, and thus avoid delays;
 3. customs integrity will not be challenged during the clearance process and thus, less possibilities for corruption.

3. Addressing non-tariff barriers (I)

	EGs (Tariffs+AVEs of NTBs)			
	APEC list		WTO list	
	(1)	(2)	(3)	(4)
	Tariff + NTBs (import weighted)	TRI	Tariff + NTBs (import weighted)	TRI
Australia	8,5	27,7	12,6	55,5
Canada	n.a.	n.a.	12,2	68,4
China	1,6	5,3	15,0	47,4
Costa Rica	n.a.	n.a.	n.a.	n.a.
European Union	n.a.	n.a.	0,0	1,1
Hong Kong, China	0,0	0,0	0,2	4,6
Japan	0,1	0,9	4,2	18,1
Korea, Rep,	n.a.	n.a.	n.a.	n.a.
New Zealand	15,5	34,0	12,7	31,7
Norway	n.a.	n.a.	0,0	0,1
Singapore	12,9	25,2	34,9	91,7
Switzerland	1,8	9,2	3,2	18,6
United States	1,6	15,8	7,8	55,4
Average EGA country	5,2	14,8	9,3	35,7

- Many applied tariffs = 0: little to offer unless NTBs are covered.

- Evidence suggests that NTBs have a greater impact on trade volumes than tariffs.

- Ad-valorem equivalents of NTBs can be very high compared to tariffs, and these are lower-bound estimates mainly based on WTO TBT notifications (do not include LCR, GP related barriers).

Caution

N.B.: NTBs between Members must be compared with caution as HS-6 lines with missing NTB estimates have been eliminated (e.g. China only has NTB data for 5 products on the APEC list so the average value is over 5 products only).

Source: de Melo and Vijil (2016) [21]

3. Addressing non-tariff barriers (II)

Income group (number of countries)	Overall protection (Tariffs+AVEs of NTBs))					
	EGs				Other goods	
	APEC list		WTO list		APEC list	
	(1)	(2)	(3)	(4)	(5)	(6)
	Tariff + NTBs (import weighted)	TRI	Tariff + NTBs (import weighted)	TRI	Tariff + NTBs (import weighted)	TRI
HIC (14)	5,8	16,1	6,9	29,1	7,0	30,4
UMIC (23)	13,8	25,2	18,6	41,9	17,0	42,7
LMIC (23)	30,2	52,2	23,9	40,7	19,6	44,8
LIC (10)	40,5	70,2	16,7	33,1	10,7	25,6

Source: Melo and Vijil (2016) [21]

- NTBs AVEs: high and decreasing by income group fo APEC list.

- However, unlike tariffs, not all NTBs are welfare-reducing since some provide regulations to correct market failures.

=> Significant benefits from international regulatory cooperation on regulations, standards, testing and certification procedures, particularly for emerging new technologies (Easier to obtain cooperation in the context of the small group of countries in the EGA?)

4. Reducing barriers to trade in environmental services

- Greatest challenge facing EGA (not on negotiation agenda) as strong complementarities between Trade in EGs and trade in ESs (embodied in environmental projects). See [] and []
- Trade liberalization is to result in increasing trade in tasks (services) as opposed to increasing trade in goods (many operators integrate the supply of ESs with the importation of EGs) => removing barriers to trade in services is necessary. Trade costs in services could be 2 to 3 times higher than those for trade in goods [].
- Challenging to measure the level of restrictiveness in ESs trade (attempts from OECD and WB STRI): applied services policies less restrictive than GATS and FTAs bound commitments. []
- Current identification of ESs (W/120 list based on CPC codes): (i) Sewage services; (ii) refuse disposal services; (iii) sanitation and similar sectors; (iv) and other services (cleaning services for exhaust gases, noise abatement services, nature and landscape protection services, and other services). Important ESs for environment are classified elsewhere on W/120 list: e.g. construction and engineering services; professional services; research and development services; tourism.
- Definition of ESs is too narrow and inadequate: ESs defined as end-of-pipe public infrastructure services, fails to include a prevention-oriented vision of ESs and other important services classified elsewhere that are necessary for implementing environmental projects. Ex: In wind and biomass power generation-related sector, 25 discrete services activities are needed

Correlates of bilateral Trade intensity in EGs (1)

Detecting correlates of bilateral Trade intensity in EGs—results on next page [22]

- Standard structural gravity model in cross section
- With an interaction between trade policy variables and EG
- Estimated with PPML

$$\begin{aligned} X_{ij}^k = & \alpha_{tariff} \log tariff_{ij}^k + \alpha_{tariff-EG} (\log tariff_{ij}^k) EG^k \\ & + \beta_{NTB} \log(RO_{ij}^k) + \beta_{NTB-EG} \log(RO_{ij}^k) EG^k \\ & + \gamma Bil_{ij} + \gamma_i^k \gamma_j^k + \mu_{ij}^k \end{aligned} \quad (1)$$

- We expect a positive coefficient on regulatory overlap and a negative coefficient on tariffs

Correlates of bilateral Trade intensity in EGs (2)

Similar patterns across lists. Three conclusions: (i) No EG specificity in coefficients; (ii) Negative sign for tariffs; (iii) Positive sign for overlap measure

List EG:	(1) APEC(54)	(2) WTO(410)	(3) EPP(106)
Log(Tariffs)	-6.831*** (0.335)	-6.544*** (0.311)	-6.788*** (0.333)
Log(Tariffs)*EG	2.347** (1.154)	-0.638 (0.735)	-3.233* (1.774)
Log(Reg. Overlap)	0.265*** (0.0699)	0.221*** (0.0821)	0.259*** (0.0685)
Log(Reg Overlap)*EG	-0.303*** (0.112)	0.136 (0.138)	-0.429* (0.225)

Bilateral control variables are omitted in the table to save space

Robust standard errors in parentheses

* p<0.1, ** p<0.05, *** p<0.01

...Preliminary conclusion: gains from convergence in environmental regulations
...also supported by word comparisons of legal texts []

...but time invariant omitted bilateral factors affecting bilateral trade not controlled for

Reforming the WTO

WTO in progress (haha!)

Environmental Goods Agreement Negotiations (EGA)

- (EGA) negotiations—Low expectations (ESs and NTBs excluded), very little on the table except China and Korea.
- ...and depends on case law interpretation of ‘likeness’ under tariff negotiations. So far case law only allows discrimination for objective categories (e.g. LDC category). Could change under EGA
- ...but issue-oriented Plurilateral Agreement (PA) that can pave the way for later multilateralization

Attractiveness of PAs

- EGA could be leader for sector agreements (HFCs and other SLCP, cement, aluminium « building bloc/ experimental governance »)-
- PAs are a complement to WTO multilateral approach.
- A multilateralized PA satisfies 3 criteria (that eluded KP): (i) full participation; (ii) Comply; (iii) change behavior substantially

Shift WTO from a negative to a positive contract [17]

- Currently WTO members can choose environmental policies they wish (except for green subsidies and diluting exchange of market access to partners). See next slides on what members can/cannot do
- Obligation to address environmental damage. Establishment of likeness should be a question of policy, not of market-likeness as perceived by consumers
- Ensure that WTO rules apply to international emissions trading schemes and that «free allowances» are actionable subsidies under WTO rules.
- Legalize environmental labelling via recourse to ISO standards (now outcome uncertain under case law). Using an ISO std. guarantees immunization from challenges at WTO.

The WTO now

WTO is a negative Integration Contract

(resembles negative goods vs positive goods on QR lists in old days....)

- GATT,GATS: individual countries can choose their own environmental policies (so long as they don't discriminate).
- Only restrictions on behavior is to prevent members from reneging on exchange of market access
- What members can do (BTA) and cannot do (environmental subsidies-next slide)
- What is unclear for members: labelling (following slide) —but case law can be overturned and likeness not left to consumers to decide but become a matter of policy in the case of TBTs

What Members can and cannot do (1)

- **Can do:** Apply a tax at the border: Border Tax Adjustment (BTA) see [14]

Why BTA? Carbon prices are far from converging and leakage rates can be cut in half by BTA (from 30% to 15%)

Example: Apply a border tax of 10% on carbon content of cement clinkers (CC) to compensate for a domestic CO₂ tax of 10%.

⇒ If Foreign invokes article III.2 and shows that measure protects DCS by applying the likeness test (decided by consumers!), Home will fail and be found to discriminate

⇒ ...but home can still invoke art. XX(g) of GATT (and apply it even-handedly). Then burden of proof is on home (and it will win easily). See [17]

- **Cannot do:** apply an environmental subsidy. These are now actionable as art. 31 SCM making them non actionable for a 5 year period was not renewed in 2000). See [17]

What Members can and cannot do (2)

Environmental Labels

Background: IPPC: 38% of reductions from CO₂ emissions to come from use of energy-efficient (EE) products—both in consumption and in a performance-based sense.

Example: Home sets a ceiling on CO₂ emissions of cement clinkers (CC-HS252-321). The TBT applies to this labelling scheme

- The test of ‘likeness’ is no longer HS classification (as under a tariff) because it is a domestic instrument
 - Foreign complains: the label is unnecessary and discriminatory
 - AB report on US-Tuna II (Mexico) has interpreted « necessary » as least costly (easy to argue) so it is TBT-consistent.
 - But is it discriminatory? Case law leaves it up to consumer who will choose the (cheaper) dirty (!) clinker.
- ⇒ Do not leave it to adjudicators (and hence consumers). Change the case law as likeness should be a question of policy [17]

Greening the WTO ^[10]

(move to a positive contract)

- Climate clubs are no curb to multilateralism but can help solve the free-rider problem (next slide)
- Obligation to address environmental damage. This involves harmonizing customs classification via WCO
- Allow for 'green' subsidies (re-instate art. 31 SCM). Potential abuse, but would ease transition to green ppms.
- Compulsory monitoring of fossil fuels subsidies. This would be equivalent of currently compulsory TPRM. (currently voluntary supply of similar information is disincentivizing).
- Legalize environmental labelling (now uncertain under case law) - via recourse to ISO standards. Using an ISO std. guarantees immunization from challenges at WTO.

Climate Clubs [25]

- Combine a critical mass and a Plurilateral Agreement (PA).
- Example: single out cement production ($\approx 5\%$ Co₂). Signatories agree to staged reductions perhaps after agreeing that say 80% of emitters participate.
- Punishment for non-participation not envisioned. Nordhaus sees a club with punishment for non-membership as a means to avoid free-riding
“explicitly allow for uniform tariffs on non-participants within the confines of a climate treaty... [and] prohibit retaliation against countries who will invoke the mechanism” [[25], (p.1339)]

-Relatively well-targeted penalty that is incentive-compatible (for tariffs in 5-20% range punisher gains; free-riders lose huge benefits of WTO membership)

- Under current negative contract, countries cannot be told to adopt climate-mitigation policies.
- ...and a club of countries cannot raise their bound tariffs—even in non-discriminatory manner—against non-members (under PTAs members cannot raise tariffs against non-members).
- Alternative: push participation via domestic taxes that are unbound rather than via tariff differentiation

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