

Workshop
Designing the Green Economy:
Economic Principles and
Guidance for Policy Makers

REMARKS ON TRADE IN A GREEN-
GROWTH STRATEGY

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Outline

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- 4 roles for trade in the challenges ahead
- How much leakage?
- Political Economy of Implementation
- The Doha mandate (art. 31) on EGS and on fisheries subsidies (art. 28). No mandate effect in WTO members' behavior.

Four roles for Trade in the Challenges Ahead

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1. Yesterday's discussion: huge R&D effort (private and public). Open WTS helps diffuse technological progress
2. Threat of trade sanctions as under Montreal protocol to entice participation (deter 'free-riding')
3. Trade measures to correct for carbon leakage (aka 'pollution haven' effect). (A nightmare!)
4. Large differences in abatement costs, so need to separate where abatement takes place from who pays the costs (carbon-credit trading system as in e.g. ETS).

How much leakage?

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- Obvious trade in «virtual carbon» but likely not yet due to KP policies
- Evidence from SO₂: not much world-wide leakage over period 1990-2000 (see below). May be relevant for CO₂
- In search of pollution haven effects (see paper posted on workshop site)

Net Change in Territorial Emissions (1990-2008)

or

Why caps should be consumption-based, not production-based

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Source: Peters et al. (2011, figure 3)

Note : Estimates exclude emissions related to land-use change.

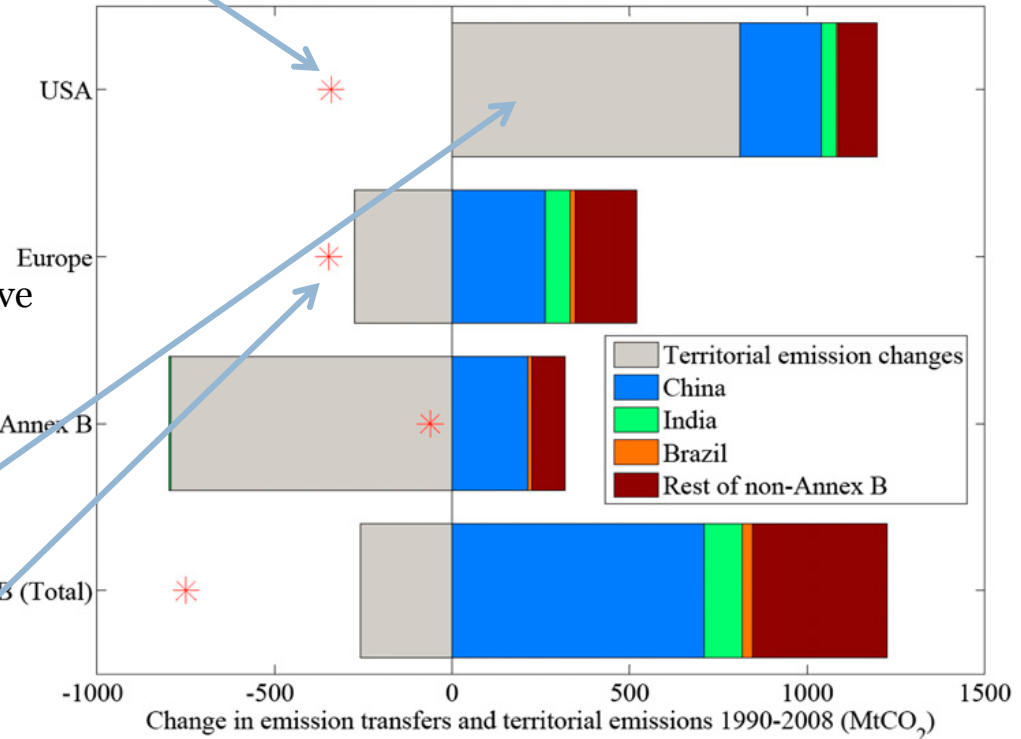
Annex-B are the developed countries participating under KP.
Emission transfers between Annex-B countries have been removed. Europe represents Annex-B EU-27 plus Croatia, Norway, Switzerland.

(*) Shows pledges for reduction under KP (including non-signatory US).

All annex B countries are importers of emissions, mostly from China.

Positive changes in transfer values represent net importers of emissions.

KP pledge



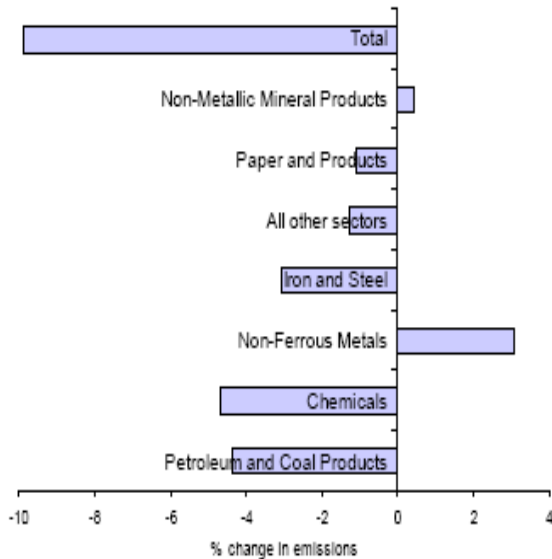
...but not the US

Europe met KP-1 production target...so long as one does not count net CO₂ embodied in trade

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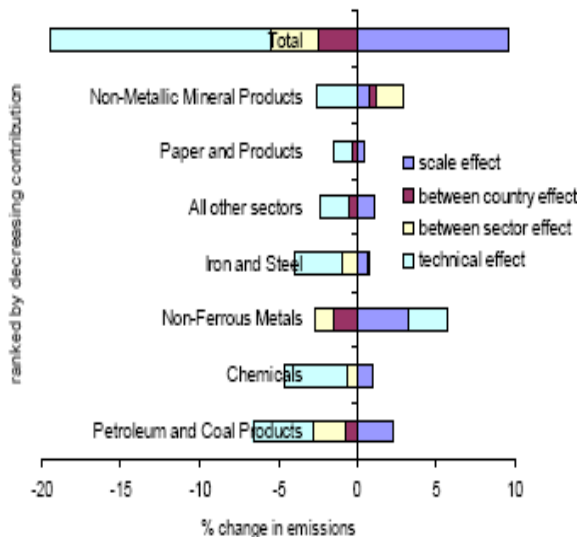
SO2 emissions: 1990-2000

Total Effect



Total = -9.8%
 Scale = 9.5%
 Tech. = -14.0%
 w/n = -3.0%
 b/w = -2.4%

Decomposition

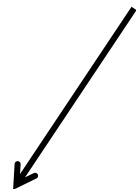


Counterfactual: Produce consumption bundle without trade

Opening to trade: emissions up by 10% in 90 emissions up by 3.5% in 2000

= supports pollution-haven view ...but more important are emissions related to international transport= Account for 5-9% of total mfg. emissions Adding trade-related transport activities + composition effects

□ **Mfg. emissions up by 15%**



Political Economy of Implementation

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- Consensus that a tax of 100\$ per ton of CO₂ necessary to stabilize rise in temp. = 1 \$trillion rents per year up for capture !
- Biofuels: In US, 200 support measures per year costing \$6billion+ 46% tariff on imported ethanol to protect infant-industry (=agriculture); EU 43% on imported ethanol
- 164 sectors/subsectors submitted to EU for «significant threat of carbon leakage» □ free license allocation under ETS.

The Cap and Trade System (CAT)

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- If «independence property» holds, efficient allocation regardless of initial allocation of permits, but gov'ts who allocate licenses are not cost minimizers.
- CAT worked relatively well under US Clean Air Act of 1990 as SO₂ emissions were cut in half in the US 1990-2000 with distribution of 'bonus allowances' to get bi-partisan support. Costs decreased by 50% relative to pure cap
- Has not worked well internationally with fight over rents in the EU ETS (and proposed regulation on emissions from airplanes)

Border tax adjustments (BTA) Steel case (Moore, 2010)

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Table 4: Satisfying Policy Constraints

Constraint	Baseline Scenario	Scenario 1: Firm-specific tax	Scenario 2: Average foreign emissions	Scenario 3: Average domestic emissions	Scenario 4: "Best available" U.S. technology	Scenario 5: "Worst available" U.S. technology with foreign firm submissions
1.a Domestic firm buy-in	N	Y	?	N	N	?
1.b Foreign firm buy-in	Y	N	N	N	Y	?
2. Incentives for foreign firm CO2 reduction	N	Y	N	N	N	Y
3. Adherence to WTO rules	Y	Y	N	N	N	Y
4. Administrative tractability	Y	N	N	Y	Y	Y

Notes: Y=Plausibly does satisfy constraint; N=Does not plausibly satisfy constraints; ?=unclear

Moore concludes that none among BTA adjustments meets all the constraints for being implementable

The «no-Doha-Mandate-effects»

- The subsidy problem (fossil fuels, water)...and fisheries "Non-actionable". Huge problem for a green growth development strategy.
- Can this be fixed at WTO or should it be in another international organization (World Climate organization?)
- Doha Art. 28. «..participants shall also aim to clarify and improve WTO disciplines on fisheries subsidies...»
- No outcome....yet fish are «more visible» than climate.. See UNEP book on Fisheries subsidies. Same applies to art. 31 mandate on EGS (see next slides)

Stalemate on art. 31 negotiations on EGS

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- Two categories of EGs
 - ▣ Goods for Environmental Management (GEMs)
 - ▣ Environmentally preferable products (EPPs)
- Problems identifying EGs
 - ▣ Multiple-end use for GEMs
 - ▣ Relativism, attribute disclosure, 'like products' for EPPs
- Common Problems to GEMs and EPPs
 - ▣ No coverage in HS nomenclature
 - ▣ Lock-in

Identifying/Classifying Goods Related to Preservation and Management of the Environment lawyers' paradise, economists' nightmare

Goods for Environmental Management (GEM)
(Pollution, Resources)
Multiple end-uses

Environmentally Preferable Products (EPPs):
Single use

Production

- Aluminium (Prebake vs Soderberg)
- Organic cotton vs conventional cotton;

Use

- Solar stoves
- Solar furnaces
- Energy efficient consumer goods

Disposal

- packaging (glass vs. plastic)
- Cotton fiber *versus* synthetic fiber



Identification of use

Project Approach
Finer/alternative HS-classification problematic

Identification

Relativism: to the frontier (static and dynamic)
Attribute Disclosure (requires an efficient disclosure mechanism (e.g. certification and harmonization))
Processes and Production Methods (PPMs) and the *like products* at WTO

Difficulties to negotiate on agricultural products (e.g. biofuels) and environmental services
Lock-in if characteristics are embodied in HS code
No coverage in the HS (products and services)

WTO environmental Goods Submissions

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- Doha Article 31 mandate: Countries to come up with approach for identifying products for tariff reduction negotiations
- Classification difficulties reflected in approaches:
 - (i) «list»
 - (ii) «Request and offer» (favored by some developing)
 - «Integrated project» (to deal with multiple-end use)
- By 2008 13 countries lists → 411 HS-6 codes with little overlap (see next slide)

...A decade later, no agreement on a list of EGS

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EGS= Environmental Goods and Services

Singles= 279

Duplicates =90

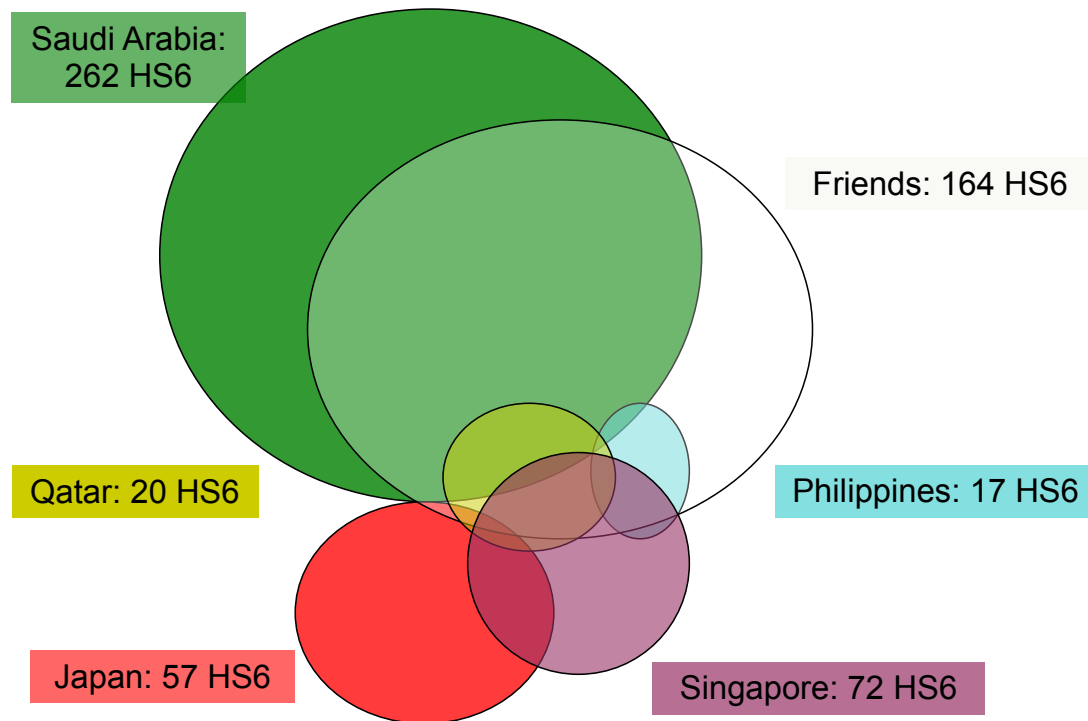
Triplicates= 35

Quadruplicates: 7

Note: «Friends» list includes 13 countries: EU, US, CAN, SWI,

→ 2010: «start» negotiations on a core list of 26 goods

Figure III-B – The geography of overlaps

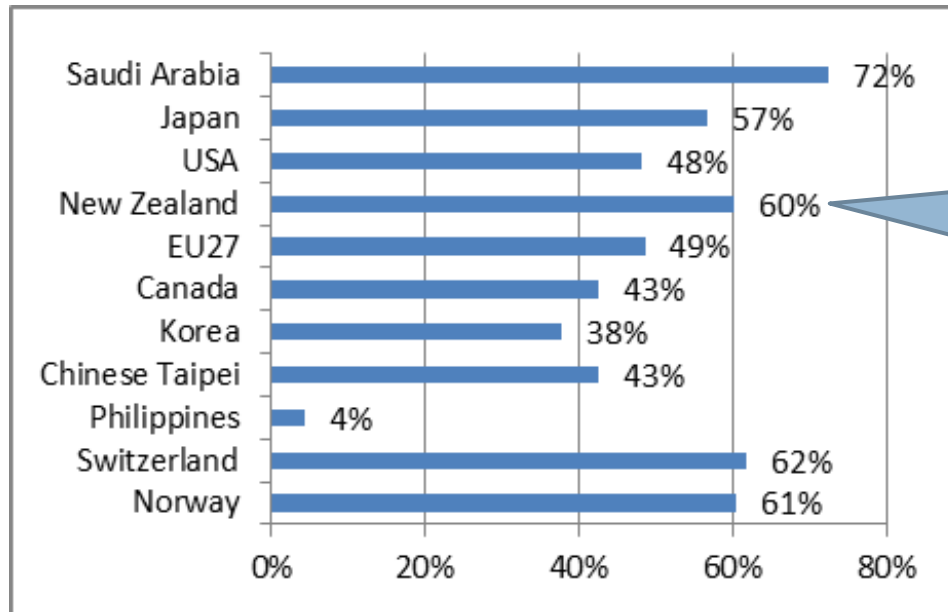


Source: Vesile Kulaçoğlu, Contribution of Trade Opening to Access to Climate-Friendly Goods and Services, WTO Trade and Environment Division, WTO Side Event at COP 16, 8 December 2010

Correlates of EGs submissions

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% of goods proposed under the 2008 CTESS program with Revealed Comparative Advantage ($RCA > 1$)(in 2007)



Among the goods submitted by New Zealand (ie the 164 goods of the Friends' list), 60% are goods for which it had a RCA in 2007

Source: Ballineau and de Melo (2011). Probit estimates for a sample of 3800 submitted goods confirm that the probability of submitting a good to the EGS list is higher for goods with an $RCA > 1$ and lower for goods with a high MFN tariff.

Patterns of Tariff Reductions ...No mandate effect

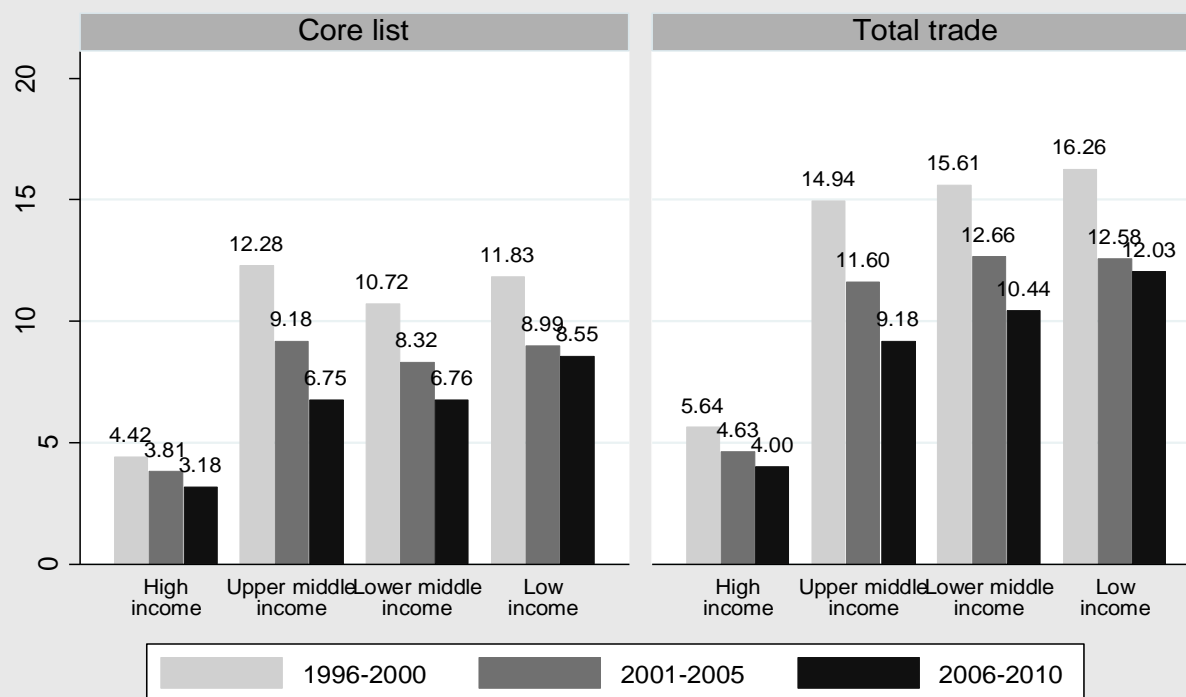
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No «mandate effect» as no acceleration in reduction of protection after 2001 relative to reduction in protection for other products

Especially for low-income countries

Next slide shows outcome under standstill

Figure 3 - Evolution of the average rate of protection, 1996-2010
Core list and total trade, by income group



Source: Authors' calculations, from TRAINS tariff data (see Annex IV)

Ranking of Tariff Reduction Events

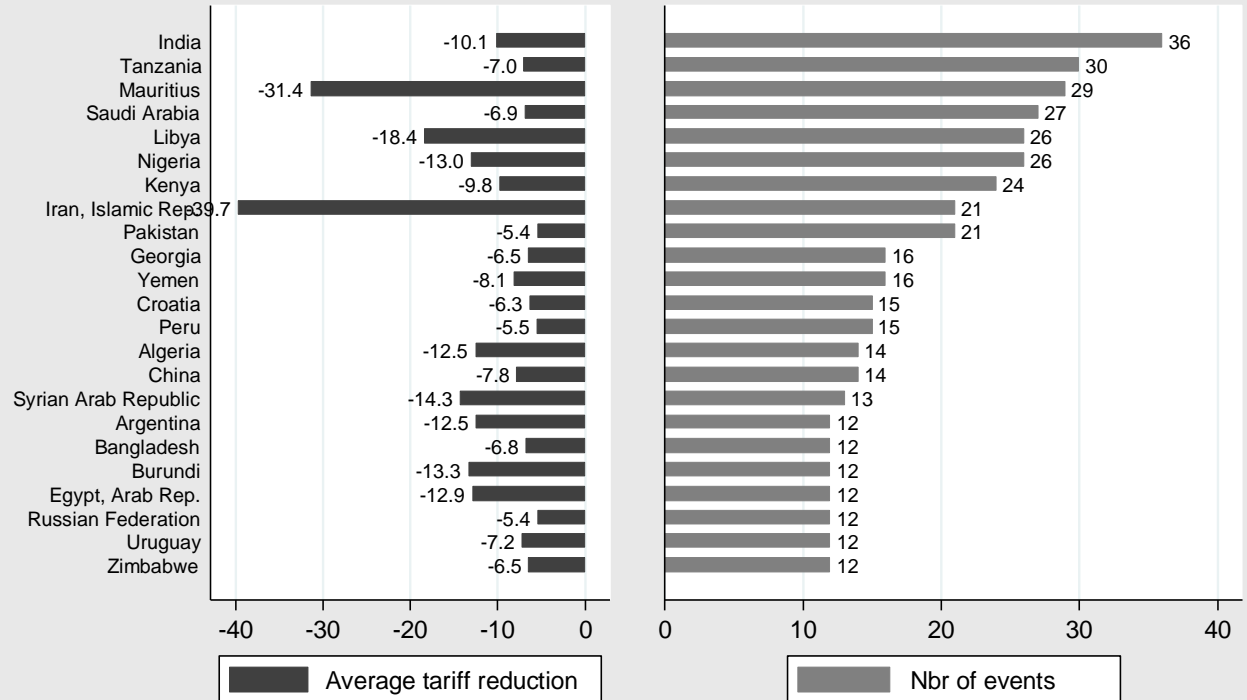
Event= tariff reduction > 5 percentage points.

India had the most events (36) with a 10.1% average tariff reduction per event.

China 14 events with 7.8% average tariff reduction per event

→ event analysis results: same import response in event group and in control groups

Figure 5 - Number of events and average tariff reduction
Top 20 reducers, Core List only



Countries ranked by number of events in descending order
Source: Authors' calculations, TRAINS tariff data and COMTRADE import data, see Annex IV

Conclusions

- Leakage effects probably exaggerated for political economy reasons.
- Border tax adjustments looming on horizon when we will get serious about climate
- So far no mandate effect at WTO: Countries did not act on articles 28 and 31 Doha mandate
- Trade sanctions for compliance and/or for inducing participation. MP worked but very different from climate change