

Trade and Climate Change Policies: Multilateral vs. Plurilateral Cooperation

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Introduction

- Trade, policy and environment:
 - Trade → environment/climate change outcomes
 - Trade policy → environment/climate change outcomes
 - Environmental policy → trade outcomes
 - Trade policy ↔ environmental policy
- Policy dimensions:
 - Unilateral, non-cooperative – many instruments
 - Cooperative
 - Multilateral – WTO, UNFSS/Kyoto/Paris
 - Plurilateral
 - Preferential trade agreements
 - Sectoral or issue-specific cooperation

Extensive analytical/empirical literature starting in the 1970s

- 1970s: e.g., Baumol (1971): *Environmental Protection, International Spillovers and Trade*; 1990s: e.g., Anderson/Blackhurst (1992): *Greening World Trade*; Low (1992): *Trade and the Environment*
- Basic issues and applicable analytical frameworks have been well-understood for decades
- What has changed is the magnitude of the challenge / type of externality – from mostly local/national pollution agenda to climate change, starting in mid 1980s – e.g., Montreal Protocol on Substances that Deplete the Ozone Layer
- Major advances in the granularity of empirical & quantitative research, starting in 1990s
- Viz. Copeland/Shapiro/Taylor survey of recent empirical research on effects of trade (globalization) on environment in 5th ed of handbook of international economics
 - New/more cross-country data on environmental and firm-level variables improve understanding of effect of trade on the environment and the underlying mechanisms
 - Trade matters negatively for GHG emissions, in part through transport; conversely has positive offsetting effects via changes in scale, composition; technology; intra-industry shift towards larger, more productive firms

In parallel, extensive law & policy literature

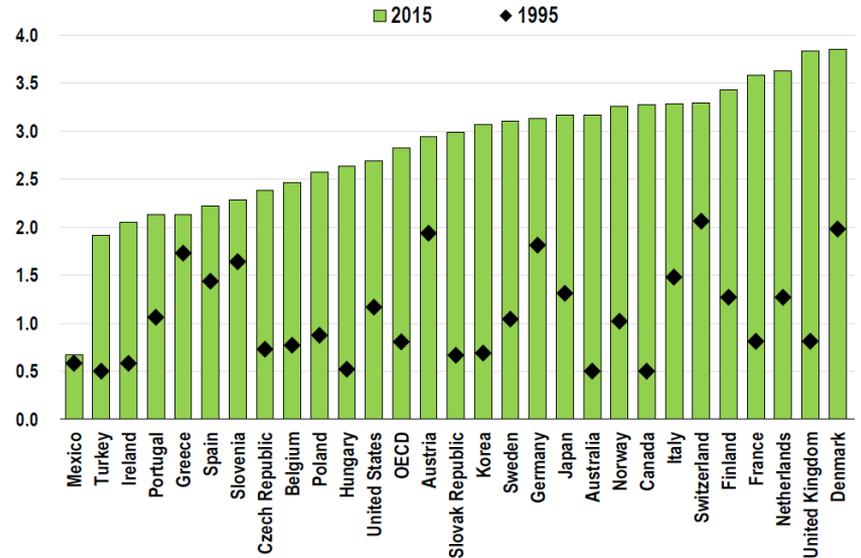
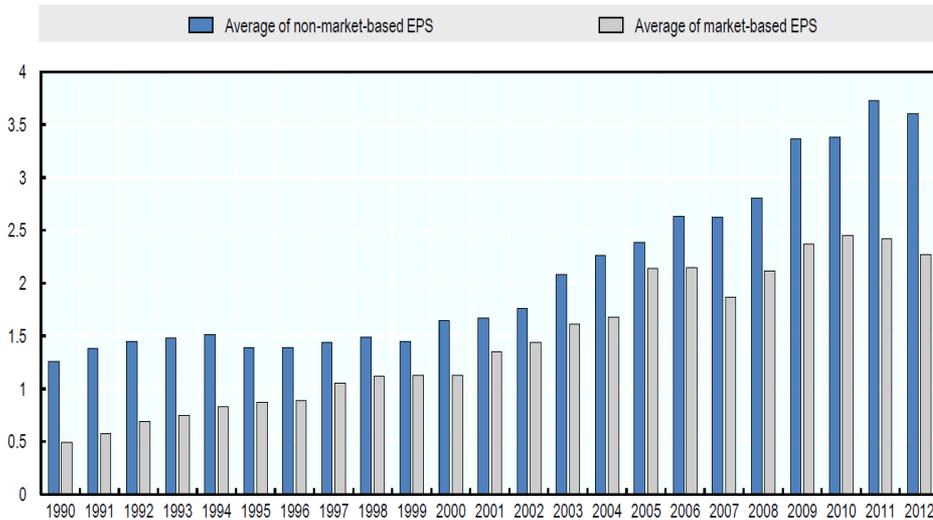
- Much of this focuses on relationship between Multilateral Environmental Agreements (MEAs) and the GATT/WTO
 - Focus on compatibility with GATT/WTO trade rules of (potential) use of trade policy in MEAs – e.g., Montreal Protocol
 - WTO case law – shrimp/turtles; tuna/dolphin; asbestos...
 - Measures satisfying national treatment/nondiscrimination tests are OK; as are measures based on international standards, or justified under GATT Art XX (Exceptions)
 - Case law on indirect taxes: destination-based VAT OK; applies to border tax adjustments
- More recent literature on environmental provisions in preferential trade agreements (PTAs)
 - Post-1995, PTAs a focal point for rule-making on trade – environment
 - Major example is the EU: common external tariff and internal carbon price determined by an Emissions Trading Scheme (ETS) → example of a “carbon club” spanning 27 countries
 - Active in including provisions on environment in its PTAs (as are US and other OECD countries)

Extent and scope of (unilateral) environmental policies increasingly steadily

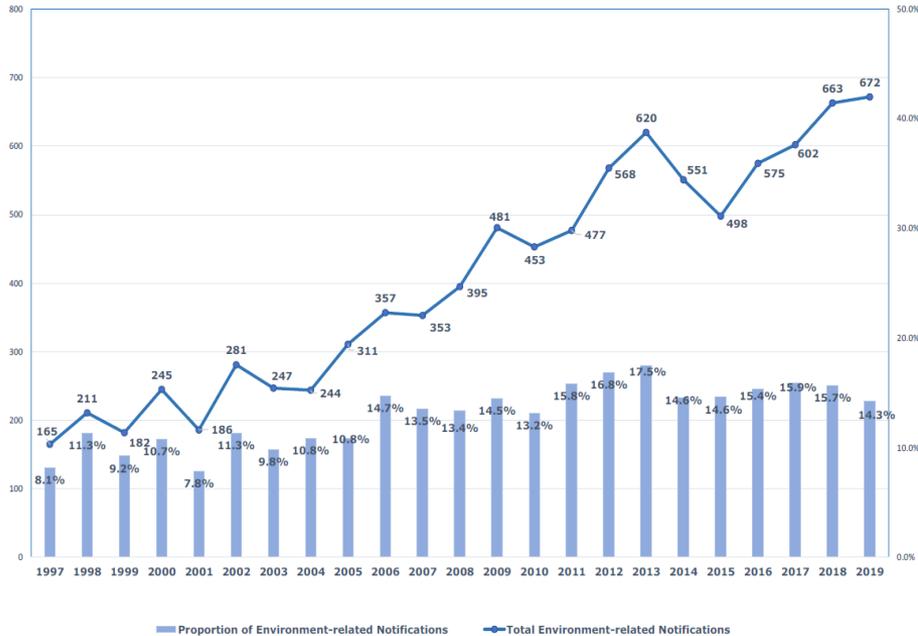
1. Measures to put a price on carbon—e.g., Emissions Trading Scheme (ETS) in EU with free allowances to address competitiveness concerns; proposal to extend ETS to imports (CBAM)
2. Much more prevalent: regulation (non-market measures)

Environmental stringency index (OECD): rising after 2002; non-market measures more stringent

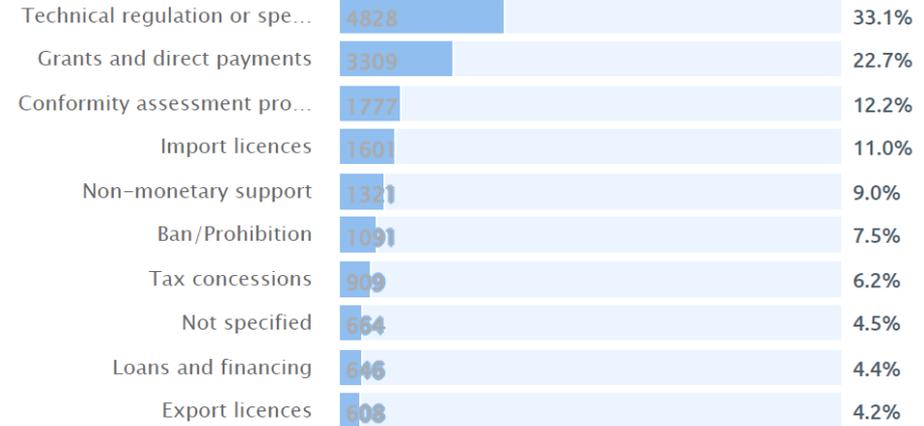
OECD-wide average by component of the Environmental Policy Stringency index



Notifications of environment-related measures to the WTO (1997 –2019)



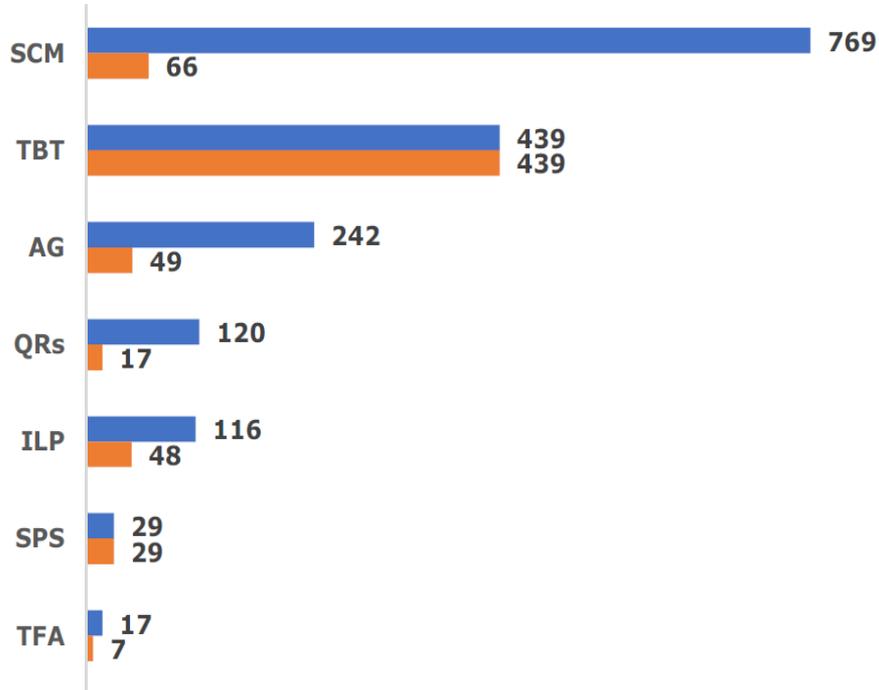
Notifications and total # of measures



One third of all measures pertain to agriculture

<https://edb.wto.org/charts>

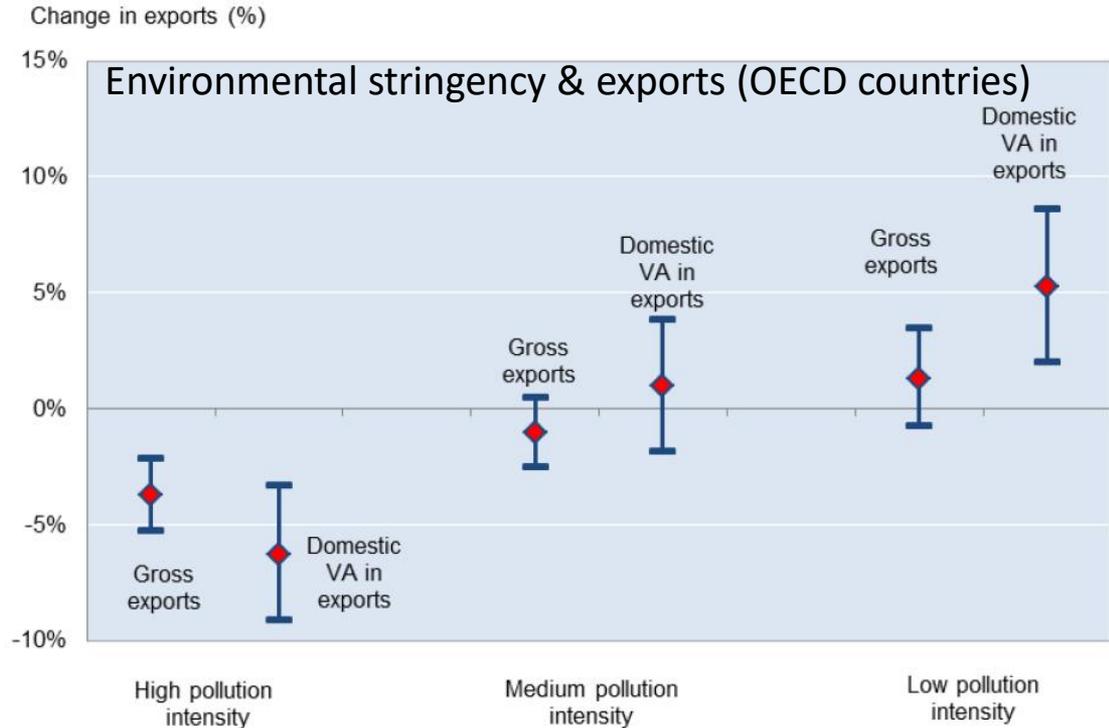
2019 environment-related notifications (orange) and measures (blue) (by WTO agreement)



- Subsidies = 35% of all measures;
standards -= 25%

Effects of environmental regulation on trade

- Rapidly expanding empirical literature
- Clear association between regulation and improvements in env. outcomes
- Little evidence environmental policies impact negatively on home country economic activity, employment, etc.
- Support for pollution haven effects—less so for pollution haven hypothesis/leakage (offshoring dirty activities to foreign low regulation locations)
- Effects are heterogenous across firms within sectors



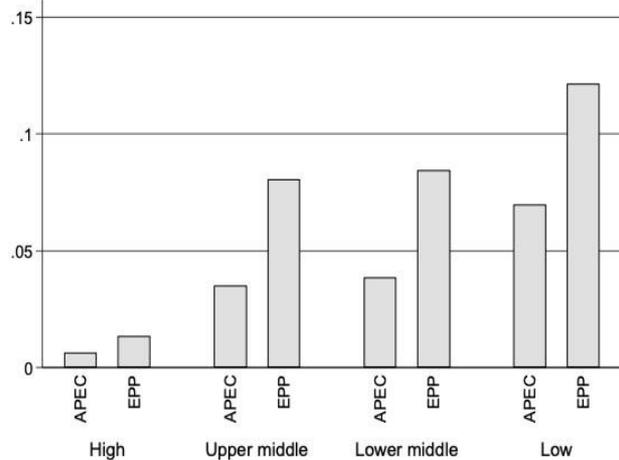
Source: Dlugosch & Kozluk, 2017

Unilateral trade policies and the environment

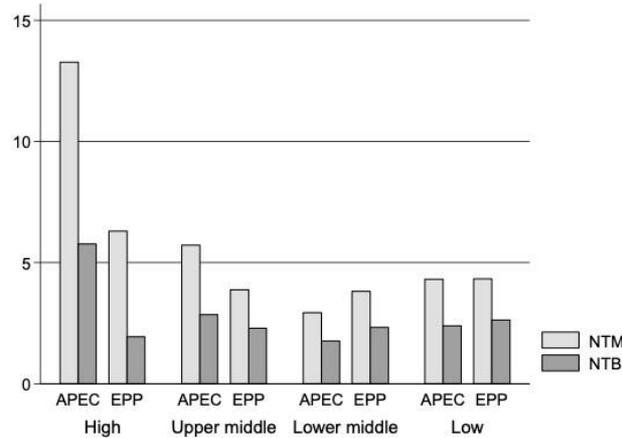
- Tariff structure – common pattern of low tariffs on natural resources/commodities; tariff escalation will affect carbon content of total imports
 - Shapiro (QJE, 2021): applied tariffs and NTBs create an implicit subsidy to trade output of industries that have higher CO₂ emissions per dollar of output
 - Total implied subsidy of \$85 to \$120 per ton, (2x estimated global cost of CO₂ emissions!)
 - EU countries are among the greatest such “subsidizers”
- Structure of import protection also often skewed against technologies that can lower carbon footprints – both MFN tariffs and contingent protection
 - Antidumping: US 30% AD tariff on solar panels; EU has a 48% AD tariff on bicycles
 - Countervailing duties to offset foreign subsidization, irrespective of whether products are green/contribute to lower emissions
 - Espa/Rolland (2015): Of some 100 antidumping and countervailing duties on the energy sector between 2010-2014, over two-thirds involved renewable energy products

De Melo/Solleder (WD, 2020): trade policies for environmental goods by product list and income group

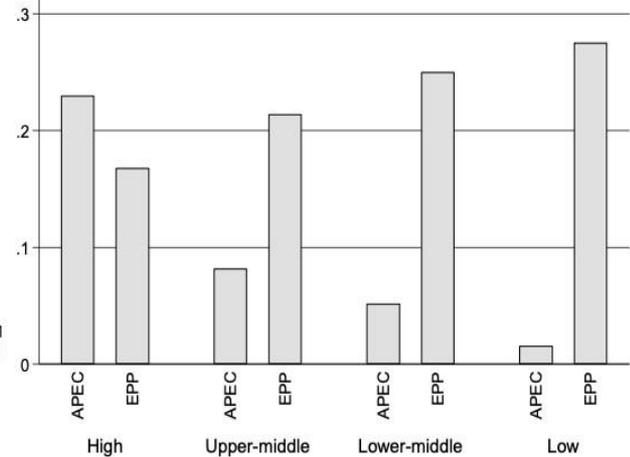
Applied MFN tariffs



NTBs and NTMs (count)



Revealed comparative advantage



APEC: list of 54 products, mostly relating to manufactures (e.g., technologies to reduce end-of-pipe emissions)
 EPP: environmentally preferable products, e.g., biodegradable agriculture-based products and recycled goods
 NTMs are nondiscriminatory regulations; NTBs are discriminatory measures

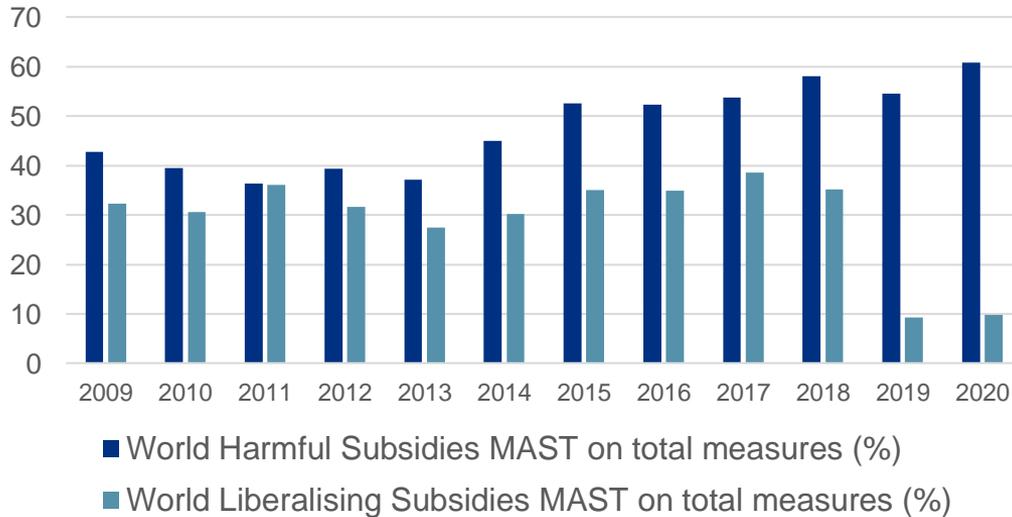
Services trade policies and trade in environmental services

- Sauvage & Timiliotis (2017) find that more restrictive services policies impede exports, i.e., source country policies reduce trade
- Problem: services trade policy indicators do not focus on environmental services as a category
- This is a more general problem with classifications of services activities used in trade context, which are outdated

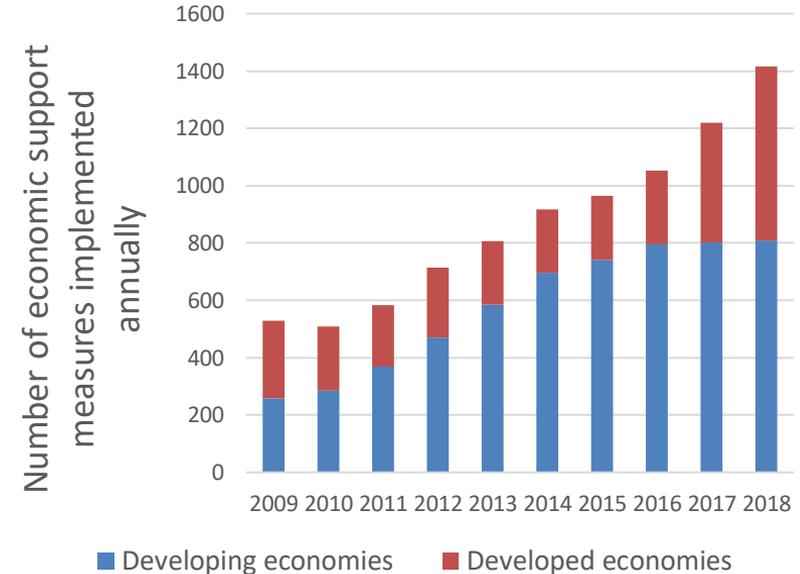
	Importer STRI	Exporter STRI
Engineering services	0.230 (0.88)	-0.830** (-2.05)
Computer and related services	-0.0344 (-0.07)	-1.409** (-2.15)
Construction services	-0.397 (-0.80)	-0.589 (-1.07)
Architecture services	0.315 (0.94)	-0.866** (-2.33)
Accounting services	0.0420 (0.12)	0.466 (0.76)
Legal services	0.0812 (0.31)	0.130 (0.27)
Observations	3283	3283

Global subsidies increasing more generally (% of all trade measures, 2009-2020)

World



Developed and developing nations



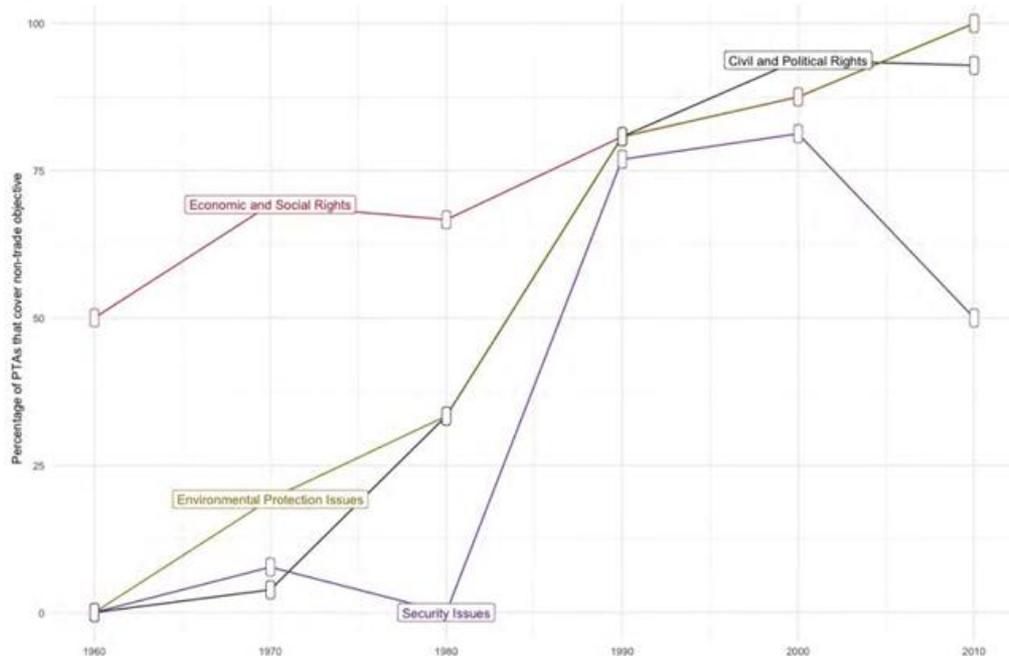
Includes investment incentives – i.e., measures targeting FDI

Coherence across instruments—complementary or offsetting?

- Data on extant trade policies broadly defined raises empirical question to what extent environmental policies are offset by trade policies
 - Suggests research should build on Shapiro (2021) to include environmental policies/regulation: what is the net effect of observed/applied trade and environmental policies across countries/sectors/activities?
- Range of observed policy instruments targeting/impacting on environmental objectives makes clear international trade cooperation needs to encompass subsidies, technical regulations & services policies; i.e., agenda extends beyond tariffs & carbon border adjustment mechanisms

Trade policy as an instrument to pursue environmental goals: preferential trade agreements

Growth in inclusion of non-trade provisions in EU trade agreements



Source: Data from Lechner (2016, 2018).

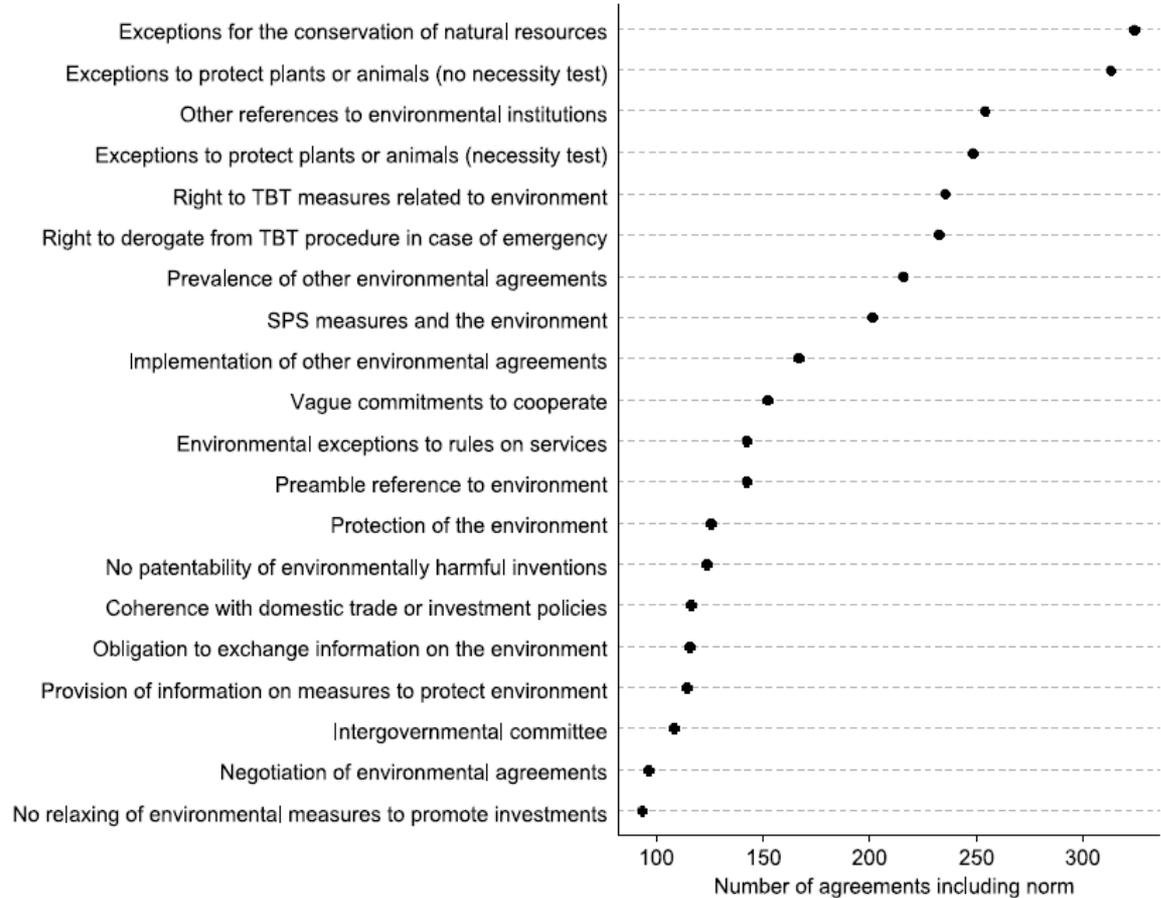
- Reflects desire to use trade to protect/project values and non-trade goals and ensure that partner countries do not lower standards to attract investment into tradeable industries that export to the EU
- Potential avenue to export environmental good practices
- Limited focus on UNFCCC, Kyoto and Paris agreements – only 4 EU PTAs reference these,
- Focus instead on national legislation and specific conventions

Most widely observed environmental norms in trade agreements (N=630)

US is market leader: an average of 66 provisions per PTA (EU average is 54)

Most frequent provisions echo WTO law

Least frequent: provisions on exchange of information & institutional mechanisms for deliberation



Nontrade provisions in trade agreements and non-trade outcomes

- Ongoing research under RESPECT project (Ferrari, Fiorini, Francois, Hoekman, Lechner, Manchin & Santi, 2020); Francois, Hoekman, Lechner, Manchin & Santi 2021)
- Use synthetic control methods and difference in difference estimation techniques to assess causal effects of NTPOs in trade agreements on non-trade outcomes
 - Some positive correlation between trade intensity and outcome
 - Mixed correlation results with provisions
 - DID results suggest that neither trade agreement provisions nor trade consistently support nontrade objectives.
- Non-result may reflect type of commitments (international conventions); non-binding nature; and/or lack of implementation follow-up and “enforcement”.
 - Caveat: limited data that captures more recent deeper PTAs

Does inclusion of environmental provisions in PTAs have desired effect?

- Run the following simple regression

$$NTO_{it} = \beta \text{Provision}_{it} + \gamma \text{Openness}_{it} + \sum \text{Intensity}_{it}^j + \eta_i + \tau_t + \varepsilon_{it}$$

- Where

- NTO_{it} : Environmental Protection
- Provision_{it} is a switch dummy taking value 1 from the year of the agreement including the given provision.
- Openness_{it} is a set of measures capturing the generic openness of a country
- $\sum \text{Intensity}_{it}^j$ collects j different measures of intensity of trade with the EU
- η_i, τ_t are country and time fixed effects

Results

Panel B	Environmental Protection			
Provision	-0.0913** (0.0282)	-0.0900** (0.0285)	-0.0848** (0.0287)	-0.0824* (0.0340)
Openness	-0.00575 (0.00390)	-0.00502 (0.00377)	-0.00188 (0.00386)	-0.00188 (0.00386)
Intensity: EU trade	-0.0344 (0.0517)			
Intensity: IMP from EU		-0.0654 (0.0518)		
Intensity: EXP to EU			-0.212** (0.0704)	-0.210** (0.0717)
Provision × Intensity: EXP to EU				-0.0139 (0.0746)
Obs.	3591	3591	3591	3591
Adj. R^2	0.962	0.962	0.962	0.962

Synthetic control-based analysis

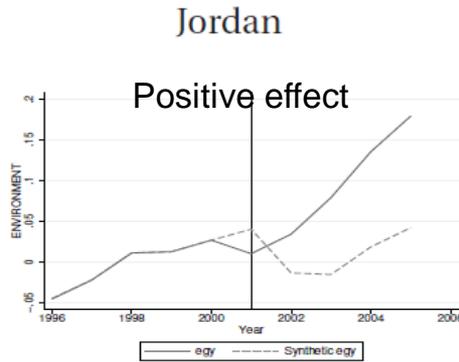
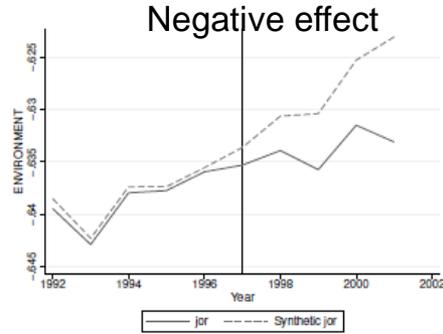
- For each i , matching on predictors of outcome: past performance on NTO @ $(t - 5)$, $(t - 3)$, $(t - 1)$; GDP, pc GDP, POP; trade with EU
- Construct a synthetic control unit as linear combination of outcome in control units assigning more weight to controls with closer values for the factor variables in pretreatment period
- Identifying assumptions: weights are time invariant. Find a set of untreated units that can be combined to match the evolution of the outcome variable in the treated unit pre-treatment
- For each treated unit (i), identify unique treatment occurrence $T_{(i,0)}$ (the signature date of an agreement with the EU including the NTO of interest during 1999-2008 that maximizes the span of years without other trade agreements by i).
- For each i , identify a donor pool of control units j including countries that
 - signed a trade agreement in a year $T_{(j,0)}^*$ as close as possible to $T_{(i,0)}$; AND
 - did not sign a trade agreement including the NTO of interest with the EU (or US, Canada, Australia, New Zealand) during the matching and follow-up period around $T_{(i,0)}^*$
- Estimate $Y_{it} = \alpha + \gamma \text{Treated}_i + \lambda \text{Treatment Period}_t + \delta \text{Treated}_i \times \text{Treatment Period}_t + \epsilon_{it}$

Aggregate results (DID using treated units and SC)

	<i>Civil Rights Protection</i>	<i>Environmental Protection</i>	<i>Labor Rights Protection</i>
Treated	0.0827 (0.0690)	0.00133 (0.00197)	-0.00645 (0.00695)
Treatment period	0.0627 (0.333)	0.00619 (0.00474)	0.00860 (0.0583)
Treated × Treatment period	-0.120 (0.249)	0.00677 (0.00800)	-0.0437 (0.0547)
Constant	-0.655 (0.523)	-0.171 (0.226)	-1.208* (0.421)
Obs.	120	200	200
Mean	.0524491	.1088617	.0050542
Standard deviation	2.156357	2.579003	1.389452

Ongoing work focusing on specific environmental outcomes – so far also finds little evidence of significant effects of PTA provisions

- Vertical line: trade agreement
- Solid line: country of interest
- Dashed line: synthetic control group
- Takeaway: what is done at country level (domestic measures) and country-specific factors is key



Egypt

- Key question: design of cooperation. Need action by both parties
- Focus on binding commitments and enforcement – an increasing focus of policy in EU – requires clear baselines, targets, data collections and M&E
- Support for dialogue and technical/regulatory cooperation critical
- Viz. Shapiro finding that institutional quality matters
- Scope for this is created by the PTAs – but must be exploited

Multilateral trade cooperation

- Little ambition or progress in WTO on trade/environment issues
- Main focus of the Committee on Trade and the Environment has been on discussing the relationship between the two areas in light of promoting sustainable development
- WTO rules leave substantial discretion for Members to implement environmental regulation, including measures agreed under MEAs
 - Subject to transparency and that measures do not introduce unjustifiable or arbitrary discrimination or disguised protectionism – i.e., national treatment applies
- Doha Round included some topics for negotiation/clarification:
 - relationship between the WTO rules and MEAs
 - collaboration between the WTO and MEA secretariats; and
 - elimination of tariffs and non-tariff barriers on environmental goods and services
 - disciplines on fisheries subsidies

So far, so little

- No appetite or effort to revisit WTO rules on the use of subsidies and countervailing duties – e.g. target environmentally harmful subsidies (fossil fuels....)
- Exception: agriculture and fishery subsidy negotiations
 - Long-standing disagreements between major players – consensus elusive
- Negotiations to reduce tariffs and NTBs on environmental goods and services have also not been successful
 - Disagreement among participants reflecting political economy factors – interests seeking to maintain protectionist measures
 - Following failure of multilateral talks, shift by 46 WTO members (including all EU28 and China) in 2014 to negotiate on a plurilateral basis following a 2012 voluntary APEC agreement to reduce tariffs on environmental goods (i.e., concerted unilateralism)
 - These small group talks were limited to tariffs and covered some 300 products. Failed because of disagreement on product coverage – China vs. EU & APEC countries
 - EGA would have been akin to the ITA: applied on an MFN basis so free riding a factor

Trade/environment discussions parallel a broader trend in WTO

- Difficulty of achieving consensus on a multilateral outcome binding all WTO members → shift to smaller group – plurilateral – engagement
- Standard practice pre-WTO (GATT period) that negotiations are among “principal suppliers” with an eventual outcome extended on a multilateral basis
 - WTO examples: Information Technology Agreement; Telecom Reference Paper
- 2017 WTO conference in Buenos Aires: groups of countries launch “joint statement initiatives”
 - E-commerce: focus on (i) restrictive policies and (ii) digital trade facilitation
 - Services domestic regulation: licensing, qualification, and technical standards
 - Investment facilitation: “good regulatory practices”
 - Micro and SMEs: Also focusing on ‘good practices’
- Subsequent initiation by 53 WTO members on trade and environmental sustainability structured discussions (TESSD) on environmental measures (e.g., a plastics initiative)
- Involves not just smaller set of players but possibility of “soft law” / good regulatory practice
 - (Potential to) focus on joint action & collaboration as opposed to hard rules/legal enforcement

Similar dynamics in the environmental policy arena

- From UNFCCC and Kyoto to Paris Agreement
 - Away from top-down efforts to agree to binding (enforceable) commitments on a multilateral basis towards “bottom-up” nationally determined commitments
 - Somewhat analogous to shift observed in WTO in 2013 Agreement on Trade Facilitation – to date the major example of a new multilateral agreement negotiated in the WTO
- In parallel, greater focus on/willingness to adopt unilateral trade measures
 - EU CBAM, extending the ETS cap-trade mechanism to price carbon to imports
 - More broadly, use of environment regulation and standards that condition market access
 - Applies to all products, i.e., not linked to preferential access as is case with PTAs or GSP+
- Increasing calls from academic community to establish clubs that pursue common environmental goals and measures – and to use trade policy as a default penalty/participation incentive
 - EU main example – with CBAM a way to apply EU carbon price to non-equivalent outsiders
 - More recently, “green steel” deal between EU and US, with aim to develop equivalent green standards to be applied to all sources of steel

Three types of plurilateral cooperation under the WTO

1. Preferential agreements (FTAs, CUs, EIAs)
2. Plurilateral Agreements (note the caps) that permit exclusion (discrimination)
 - Conform to the standard conception of a club in the economics literature
 - Main example to date in WTO: Government Procurement Agreement
 - Such clubs can only be included into Annex 4 WTO if consensus to do so is obtained
3. Critical mass or ‘open plurilateral’ agreements (OPAs)
 - Information Technology Agreement (tariff elimination by signatories, extended on MFN basis)
 - Telecom Reference Paper and Services Domestic Regulation (2021)
 - Multi-party interim appeal (MPIA) agreement including EU, China and a subset of WTO members to fill in hole left by US blocking the operation the WTO Appellate Body
 - All are a response to WTO consensus constraint, but more importantly a recognition of differences in social preferences, economic systems and regulatory capacities/approaches

A typology of international cooperation

Type of cooperation	Main issue	Type of spillover	Characteristics of cooperation	
			Nondiscrimination	Discrimination
Trade agreements: Binding State-to-State treaties with fixed terms and binding, self-enforcing dispute resolution	Market access	“Terms of trade” effects of trade/industrial policies	Multi-issue multilateral agreements (Uruguay Round; DDA)	Reciprocal PTAs
		Pecuniary spillovers	Issue-specific critical mass agreements (CMAs) (e.g. Information Technology Agreement)	Issue-specific, discriminatory plurilateral agreements (DPAs) (e.g. WTO Government Procurement Agreement)
Open plurilateral agreement (OPA): Open, severable, issue-specific	Regulatory heterogeneity (e.g., product market regulation; climate policy)	Cross border effects of domestic regulatory policies	International product or process standards (e.g., Codex Alimentarius)	Mutual recognition agreements
		Non-pecuniary spillovers	Good regulatory practices (e.g., OECD; APEC; WTO Trade Facilitation Agreement; New Zealand-led DEPA and ACCTS talks)	Regulatory equivalence regimes (e.g., EU data adequacy findings)
				Exporter commitments to apply importer country standards (e.g., EU Forest Law Enforcement, Governance and Trade regime)
				Climate clubs including trade penalty defaults

(When) Is issue linkage helpful? When is it necessary?

- If market access is on the table, the potential for free riding will determine whether nondiscriminatory plurilaterals are feasible
- But market access may also be useful as a penalty default in contexts where cooperation targets environmental policies
- Common presumption in literature on climate/carbon clubs
 - In part reflects administrative costs/simplicity and political economy considerations (mobilize export interests in nonparticipating states)
 - In part reflects presumption there is (will be) leakage
 - In part reflects premise that carbon club members should impose stronger climate policy on RoW
- Heterogeneity across policy instruments – regulation, subsidies, carbon pricing, trade policy – suggests issue linkages (packages) may be necessary, but not necessarily
- Need to recognize institutional capacity differences across countries: inability to implement environmental regulation effectively likely to be frequent
 - Calls for cooperation; assistance; dialogue; joint action – not a tariff sanction

From unilateralism to a plurilateral work program

- Mapping out where and what type of linkage can serve to support cooperation requires analysis and deliberation
 - Determine where linkage to market access (trade barriers) is appropriate and defensible in the sense of not constituting protectionism
 - And where it is not—other instruments to support cooperation are called for
 - Potential US-EU green steel deal an example – makes sense to explore how to establish equivalence of two regimes; linking it to removal of national security-motivated tariffs does not
- Determine on an issue-by-issue basis where free riding concerns are significant and what constitutes a “critical mass” to permit open nondiscriminatory agreements
- Sector-specific approaches enable a focus on specific technologies/challenges and design of collaborative mechanisms to encourage innovation and joint investments
 - See Sabel and Victor, *Fixing the Climate* (forthcoming)

Need to bolster multilateral governance framework for OPAs

- No clear mechanism exists for inclusion of non-discriminatory OPAs into the WTO
- Proponents could start with adoption of an enforceable code of conduct to provide credible assurance that OPAs:
 - Are voluntary
 - Are open ex ante and ex post, including accession clause with clearly defined criteria
 - Include provisions to assist developing countries satisfy specified regulatory or institutional requirements associated with OPA membership
 - If feasible, establish a stepwise schedule of compliance for countries that cannot meet all requirements at once
 - Are fully transparent – reporting; support by Secretariat; monitoring & evaluation
- See Hoekman & Sabel (Global Policy, 2019; 2021)

OPAs on trade policies to support MEAs/national environmental policy

- Two (complementary) possibilities
 1. Arrangements that reduce/remove restrictive trade policies on green products, both direct and indirect – i.e., measures that support higher-emission activities
 2. Arrangements designed to complement domestic environmental regulation
- To date efforts have centred on (1): EGA talks. These make clear a more comprehensive approach is needed spanning tariffs, NTBs, subsidies and services
- Proposals and analysis have tended to focus on specific instruments and need to adapt WTO rules
 - E.g., differentiating between “good” and “bad” subsidies; address third market effects of subsidies
- Much of debate on preventing carbon leakage through border adjustment mechanisms
 - Insufficient attention given to differentiating between leakage and competitiveness – little evidence to date the former is a serious problem, while latter can be addressed unilaterally by adopting carbon pricing + CBAM that include export rebates as opposed to only focusing on imports (Martin, 2021)

Beyond carbon clubs and trade barriers as penalty default

- Prioritize cooperation on liberalization of range of trade policies that work against the realization of environmental policy objectives
 - This is (should be) the bread and butter of trade negotiations
 - Use environment as motivation for effort for an environmental trade liberalization initiative
- Recognize the extensive heterogeneity of national policies towards global warming – and in administrative/institutional capacities
 - Suggests focusing on establishing equivalence of different regimes / policy packages
 - More generally, support thick, discursive forms of cooperation that support innovation & bolster regulatory capacity
 - Sector-by-sector regulatory cooperation (OPAs) can do so, with regulators staying in control but with participation of affected industries/stakeholders and informed by research
 - Leverage (support) relevant epistemic communities
- Revisit range of current WTO rules through an environmental lens – including subsidies
 - Hoekman & Nelson (World Economy, 2020)