EC 380: Lecture 11

Environmental Policy: International Agreements

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Prologue

Recap

Previously

- A variety of trade agreements exist under current international norms
- Agreements riddled with uncertainty and not always welfare enhancing
- Multi-year negotiations can make or break a domestic economy
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Today

- How do international agreements fare with respect to the environment?

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- Each country is a producer of pollution that is then distributed globally
- These **externalities** are common to each country, but only a lessor proportion of costs are borne by any particular emitter of pollution
- This leads to a **failure of free markets** that requires intervention across government

Notable Agreements

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WTO still influences environment indirectly. **GATT Article XX**:

> subject to the requirement that such measures are not applied in a manner which would constitute a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures (b) necessary to protect human, animal or plant life or health, … (g) relating to the conversation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

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> "GATT rules did not allow one country to take trade action for the purpose of attempting to enforce its own domestic laws in another country - even to protect animal health or exhaustible natural resources".

Issues

Case	Issue	Outcome
Tuna-Dolphin	Ban on imports of Mexican tuna by US not caught in nets safe for dolphins	GATT ruled in favor of Mexico. Strong consumer response led to net change.
Shrimp-Turtle	US ban on imports of shrimp from India, Malaysia, Pakistan not caught in nets safe for sea turtles	WTO ruled against US but US would still require use of nets provided adequate notice and consultation were pursued.
Gasoline	US ban on imports of gasoline from Venezuela and Brazil because gas exceeded maximum allowed smog-causing chemical (under US Clean Air act)	Ruled against US for violating equal treatment between foreign and domestic producers.
Biotech Food	Ban on GMO food or crops by the EU since 1998	WTO ruled against EU citing need for judgement based on scientific risk assessments.

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Considerable outside pressure and loopholes have allowed each of these policies to be applied in the end.

Trade & Environment

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- *Positive externalities* benefit the other users (e.g. scientific discovery) and *negative externalities* harm other users (e.g. indoor smoking)
- *Market failure* is a scenario in which positive or negative effects of externalities on other people are not fully paid for by the producer
- For example, if tech created by firm 1 is freely accessed by firm 2 with no payment made

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If the production externality had been "a chance at triggering technological advancement", trade would contribute towards less of the positive externality and **harm welfare**.

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In absense of these measures, international trade enlarges the market for overfished products.

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The **Convention on International Trade in Endangered Species** (CITES) now protects over 5,000 animal and 29,000 plant species in order to avoid such outcomes through trade.

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Trade can contribute towards improvements in the environment as well as deterioration.

Empirics

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Trade and the greenhouse gas emissions from international freight transport ☆

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A R T I C L E I N F O

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A B S T R A C T

We collect extensive data on worldwide trade by transportation mode and use this to provide detailed comparisons of the greenhouse gas emissions associated with output versus international transportation of traded goods. International transport is responsible for 33 percent of world-wide trade-related emissions, and over 75 percent of emissions for major manufacturing categories. Including transport dramatically changes the ranking of countries by emissions per dollar of trade. We systematically investigate whether trade inclusive of transport can lower emissions. In one quarter of cases, the difference in output emissions is more than enough to compensate for the emissions cost of transport. Finally, we examine how likely patterns of global trade growth will affect modal use and emissions. Full liberalization of tariffs and GDP growth concentrated in China and India lead to transport emissions growing much faster than the value of trade, due to trade shifting toward distant trading partners.

Empirics

Per dollar value exports, which countries have the cleanest 2004 exports?

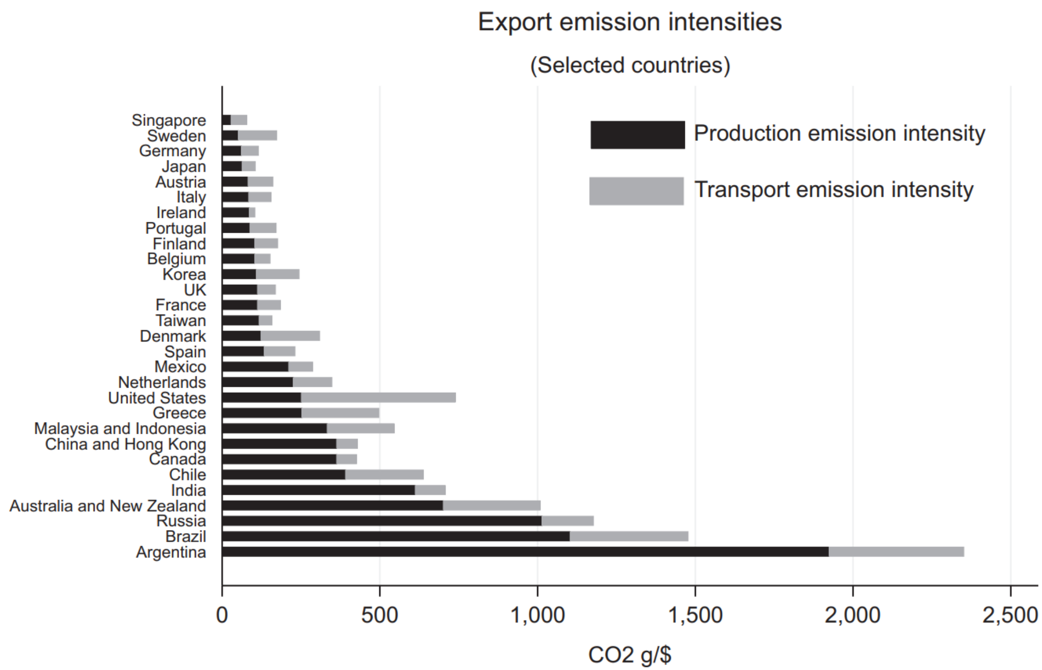

Fig. 4. Output and transport emission intensities of exports, by country. *Note:* Emission intensities are calculated based on Eq. (3) for transport, and Eq. (4) for output. The aggregation to the region level uses trade rather than output weights. The units are grams of CO_2 per dollar of exports. Data is for base year 2004. Countries are ordered by increasing production emission intensity of exports.

Empirics

- International transportation is a small fraction of **overall emissions** but a surprisingly large fraction of **trade-related emissions**
- $\frac{2}{3}$ of trade-related emissions in US exports are due to international transportation
- Many exporters and products that look relatively "clean", when focusing only on output emissions, are in fact **heavy emitters**, once incorporating transportation
- Under **trade liberalization**, transport emissions will become increasingly important, growing **twice as fast**` as the emission from trade-related output

In Summary

- Welfare gains and losses from trade agreements are complex and require case-wise assessment
- Welfare gains and losses from externalities and trade are complex, demanding similar scrutiny
- Market failures require direct government intervention through quotas, taxes and property right allocations
- As trade liberalizes, the externalities associated with relocating goods is expected to rise (further trade partners become more accessible)