

# Environmental economics in open economies

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This course will cover the recent literature on the interaction between international trade and the environment. It begins with some of the key empirical questions, such as whether trade liberalization shifts polluting industry to jurisdictions with weak environmental policy, whether or not more stringent environmental policy erodes international competitiveness, and whether or not trade liberalization exacerbates the depletion of natural capital. A number of policy issues will then be discussed, including the implications of environmental problems for the design of trade policy reforms; the effects of openness on the design of environmental policy; the implications of issues such as "race to the bottom" for the design of trade agreements, and the role of border taxes in dealing with international environmental problems such as climate change.

The lectures will draw in part on the following readings. An asterisk (\*) indicates the two most important readings in each section.

## 1. Effects of international trade on level and incidence of pollution

- Incorporating pollution into trade models
- Pollution haven hypothesis: theory and evidence

\* Copeland, B. R. and M.S. Taylor, *Trade and the Environment: Theory and Evidence*, Princeton University Press, 2003.

\* Copeland, B.R. and M.S. Taylor, "Trade, growth, and the environment," *Journal of Economic Literature*, 42 (2004): 7-71.

Copeland, B. R. and M.S. Taylor, "North-South Trade and the Environment," *Quarterly Journal of Economics*, 109 (1994): 755-87.

Zeng, D.-Z. and L. Zhao, "Pollution Havens and Industrial Agglomeration," *Journal of Environmental Economics and Management* 58 (2009): 141-153.

Antweiler, W., B. R. Copeland and M. S. Taylor, "Is Free Trade Good for the Environment?" *American Economic Review*, 91(2001): 877-90.

Frankel, J. A. and A. K. Rose, "Is Trade Good or Bad for the Environment? Sorting out the Causality," *Review of Economics and Statistics* 87 (2005): 85-91.

Ederington, W.J, A. Levinson, and J. Minier, "Trade liberalization and pollution havens," *Advances in Economic Analysis and Policy*, 4 (2004), Article 6. (Berkeley Electronic Press).

Brunnermeier, S. and A. Levinson, "Examining the Evidence on Environmental Regulations and Industry Location," *Journal of the Environment and Development*, 13(2004): 6-41.

Hanna, R. "U.S. Environmental Regulation and FDI: Evidence from a Panel of U.S. Based Multinational Firms," *American Economic Journal: Applied Economics*, 2 (2010): 158-89.

Dean, J. M., M. E. Lovely, H. Hwang, "Are Foreign Investors Attracted to Weak Environmental Regulations? Evaluating the Evidence from China," *Journal of Development Economics* 90 (2009): 1-13.

## 2. Trade, renewable resources and environmental capital

- Effects of trade liberalization on sustainability of renewable resources
- Trade and endogenous renewable resource management
- Trade and cross-sectoral externalities

\* Brander J. A. and M. S. Taylor, "International trade between consumer and conservationist countries," *Resource and Energy Economics* 19 (1997): 267-297.

Chichilnisky, G., "North-south trade and the global environment," *American Economic Review*, 84 (1994), 851-874

Ferreira S., "Deforestation, Openness and Property Rights," *Land Economics* 80 (2004): 174-93.

López, R., "Trade Reform and Environmental Externalities in General Equilibrium: Analysis for an Archetype Poor Tropical Country", *Environment and Development Economics* 5 (2000): 377-404.

Taylor, M.S., "Buffalo Hunt: International Trade and the Virtual Extinction of the North American Bison", *American Economic Review*, forthcoming.

Hotte L., N. Van Long, H. Tian, "International trade with Endogenous Enforcement of Property Rights", *Journal of Development Economics*, 62 (2000): 25-54.

\* Copeland, B.R. and M.S. Taylor, "Trade, Tragedy and the Commons," *American Economic Review* 99 (2009): 725-49.

Copeland, B. R. and M.S. Taylor, "Trade, spatial separation, and the environment," *Journal of International Economics* 47 (1999): 137-168.

### 3. Effects of environmental problems on trade policy

- Environmental problems and the case for free trade
- Trade policy as second-best environmental policy

\* Copeland, B.R., "Trade and the Environment," mimeo, UBC Department of Economics, 2010. Prepared for the Palgrave Handbook of International Trade.

Markusen, J.R., "International externalities and optimal tax structures," *Journal of International Economics* 5 (1975): 15–29.

Copeland, B.R., "International Trade and the Environment: Policy Reform in a Polluted Small Open Economy," *Journal of Environmental Economics and Management* 26 (1994): 44-65.

\* Neary, J.P., "International Trade and the Environment: Theoretical and Policy Linkages," *Environmental and Resource Economics* 33 (2006): 95-118

### 4. Effects of trade liberalization on environmental policy

- Policy substitution – environmental policy as a substitute for trade policy
- Consumption-generated vs. production-generated pollution: Implications for policy
- Environmental policy instrument choice in an open economy
- Implications for the design of trade agreements

\* Copeland, B.R., "Trade and the Environment," mimeo, UBC Department of Economics, 2010. Prepared for the Palgrave Handbook of International Trade.

Barrett, S., "Strategic environmental policy and international trade," *Journal of Public Economics*, 54 (1994): 325-338.

Haupt, A. " Environmental Policy in Open Economies and Monopolistic Competition" *Environmental and Resource Economics* 33 (2006): 143-67.

McAusland, C., "Trade, politics, and the environment: Tailpipe vs. smokestack," *Journal of Environmental Economics and Management*," 55 (2008): 52-71.

Fischer R. and P. Serra, "Standards and Protection," *Journal of International Economics*, 52 (2000): 377-400.

Staiger, RW and A. Sykes, "International trade, national treatment and domestic regulation," *Journal of Legal Studies*, forthcoming.

- \* Bagwell, K. and R.W. Staiger, "Domestic Policies, National Sovereignty, and International Economic institutions," *Quarterly Journal of Economics* 116 (2001):519-562.

Horn, H., G. Maggi and R.W. Staiger, "Trade Agreements as Endogenously Incomplete Contracts," *American Economic Review* 100 (2010): 394-419

## 5. Trade, transboundary pollution and climate change

- Unilateral policy
- Participation in international agreements and sequence of reforms
- International trade in emission permits
- Carbon Leakage and Border taxes

Markusen, J.R., "International externalities and optimal tax structures," *Journal of International Economics* 5 (1975): 15–29.

Copeland, B. R. and M.S. Taylor, "Free trade and global warming: A trade theory view of the Kyoto Protocol," *Journal of Environmental Economics and Management*, 49 (2005): 205-34.

- \* Harstad, Bard, "Coase, Climate, and Coal: Deposit Markets as Environmental Policy," mimeo, Northwestern University, 2011.

Frankel, J. A. "Addressing the Leakage/Competitiveness Issue In Climate Change Policy Proposals," in I. Sorkin and L. Brainard, eds., *Climate Change, Trade, and Competitiveness: Is a Collision Inevitable?* Brookings Institution Press, 2009.

Holland, S.P., "Taxes and Trading versus Intensity Standards: Second-Best Environmental Policies with Incomplete Regulation (Leakage) or Market Power," NBER Working Paper 15262, Aug. 2009

Gros, D. (2009). "Global welfare implications of carbon border taxes," CESifo Working Paper No. 2790.

Warwick J. McKibbin & Peter J. Wilcoxon, 2009. "The Economic And Environmental Effects Of Border Tax Adjustments For Climate Policy,"CAMA Working Papers 2009-09, Australian National University

Michael Keen and Christos Kotsogiannis, "Coordinating climate and trade policies: Pareto efficiency and the role of border tax adjustments." mimeo June 2011

- \* C. Fischer and A.K. Fox, Comparing Policies to Combat Emissions Leakage: Border Carbon Adjustments versus Rebates, RFF Discussion paper, 2011