

Comments on
“Environmental Taxation:
What Have We Learned in This Decade”
by Gilbert Metcalf

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Tax Policy Lessons from the 2000s

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Overview

- 1) Practical Experience with Environmental Taxes
- 2) Research on Environmental Taxation
- 3) Lessons for Carbon Emissions Policy

Practical Experience with Environmental Taxes

- Very limited use of environmental taxes in U.S.: 0.9% of GDP
- Environmental taxes larger in other countries, but still relatively limited (OECD avg. is 2.23% of GDP)
- These numbers are based on a broad definition of “environmental” taxes
- Environmental goals are typically achieved using other (usually less efficient) policy instruments
- Some movement towards market-based environmental regulations, but typically permits, not taxes
 - Even some attempts to cut environmental taxes (e.g., gas tax holiday proposals)

Research on Environmental Taxation

-Three key areas of research:

- 1) Second-best environmental taxation: how does the presence of other taxes change the efficiency effects of environmental taxes (and other environmental policies)?
- 2) Distributional effects: who bears the burden of environmental taxes?
- 3) Uncertainty: how does uncertainty about costs and benefits of pollution reduction affect the choice among different policy instruments?

Research on Second-Best Environmental Taxation

- Pre-existing distortionary taxes (e.g., income taxes) alter efficiency effects of environmental policy in two ways
 - Environmental policies interact with distortions caused by other taxes
 - Revenue from environmental policy can finance rate cuts for other taxes
- Key results from research on second-best environmental policy
 - For average case, optimal environmental tax is less than marginal environmental damage
 - Particular cases can vary widely from average (effects of pollution, polluting good, etc.)
 - Freely allocating permits can greatly increase policy cost (relative to tax or auctioned permits)

Research on Distributional Effects of Environmental Policy

- Research suggests that distribution of costs of environmental policy tends to be slightly regressive, but this depends greatly on
 - What kind of pollution is being limited
 - Whether households are ranked by annual or lifetime income
 - How the revenue (if any) from the policy is used
- Regressivity is often used as an argument against environmental policy (particularly environmental taxes), but environmental tax revenue can be used to make the policy distribution-neutral (or even progressive)

Research on Uncertainty and Environmental Policy

- Without uncertainty, policies that set price of pollution (e.g., pollution tax) are identical to policies that set quantity (e.g., pollution permits)
- With uncertainty, price policies are better if marginal cost is sensitive to amount of pollution, quantity policies better if marginal pollution damage sensitive to amount of pollution
 - Hybrid policies (e.g., permits with price floor and ceiling) can be better than pure price or quantity policies
- For long-lived stock pollutants, use taxes or bankable permits

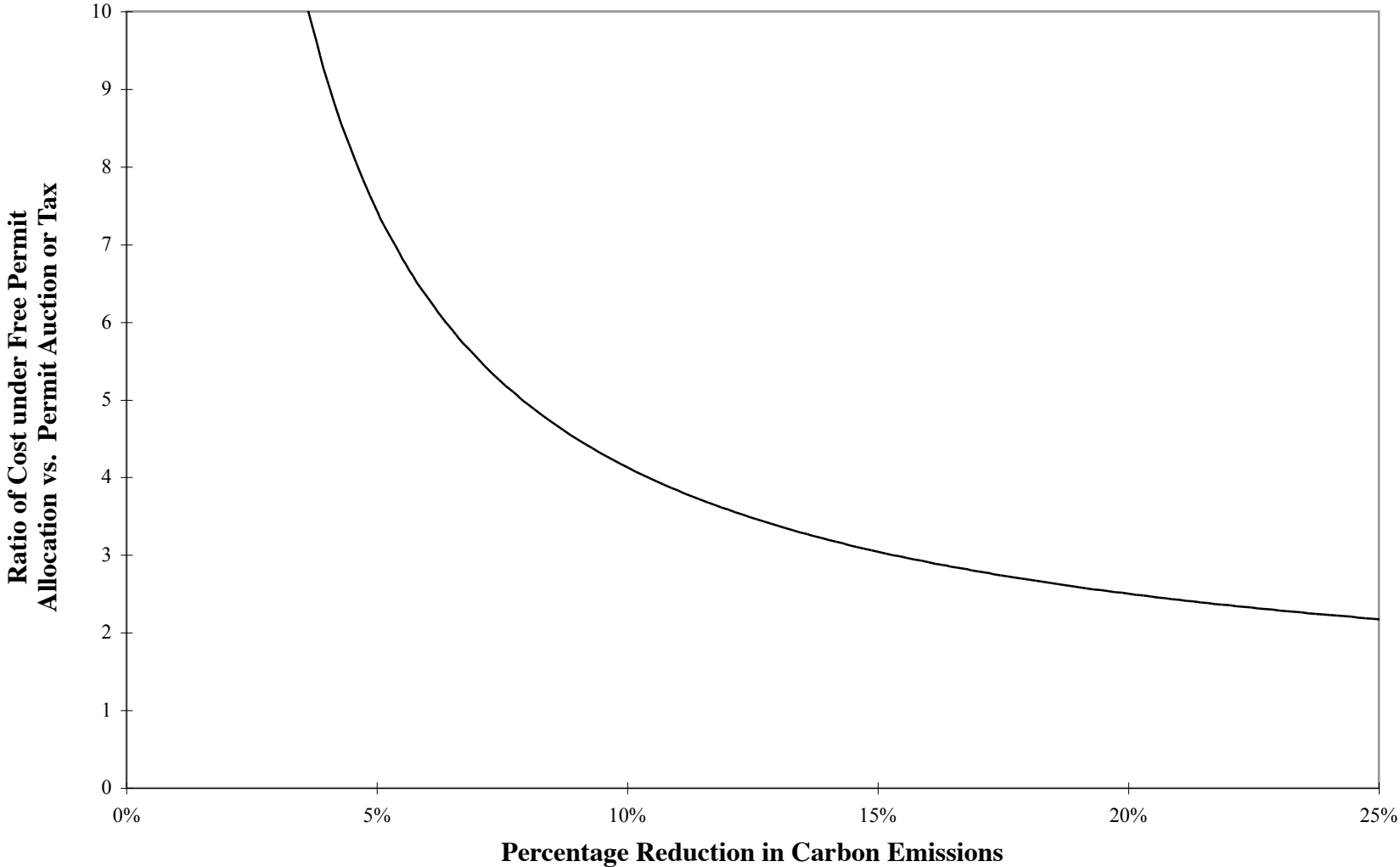
Lessons for Carbon Emissions Policy

- 1) Use a carbon tax or auctioned carbon permits
- 2) For cap & trade, have a price floor and ceiling, and allow permit banking

Importance of Revenue from Carbon Policy

- \$20/ton carbon tax (or cap & trade with \$20 permit price) would raise over \$100 billion/year in revenue
- Freely allocating permits gives away this revenue and generates windfall profits
- Revenue from carbon tax or auctioned permits can be used to
 - Cut other taxes (or reduce deficit), which can dramatically reduce the cost of the policy
 - Offset distributional effects of the policy

Free Permit Allocation Greatly Increases Cost of Carbon Cap & Trade



Reducing Permit Price Volatility

- Volatile permit prices can substantially increase costs
- Allowing permit banking reduces volatility with little or no environmental cost (carbon is a long-lived stock pollutant)
- Price floor and ceiling would reduce volatility even more
 - Price ceiling prevents excessive cost to economy
 - Price floor encourages investments in low-carbon-emissions technology

A Carbon Policy Proposal

- Carbon tax or auctioned permits with price floor (reserve price) and price ceiling (“safety valve”)
- Use a small share of revenue (perhaps 10-15%) to compensate affected industries
- Use remainder to finance cuts in other taxes (income tax and/or payroll tax) or reduce deficit
 - Make tax cuts somewhat progressive, so that overall policy is distributionally neutral
- Provide some relatively easy way to adjust policy as new information becomes available