

Pricing Externalities through the Tax System

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Introduction

My name is Ross McKitrick, and I am an Assistant Professor of Economics at the University of Guelph, where I specialize in Environmental Economics. I have been asked to speak to you today on the subject of pricing externalities through the tax system. I will briefly summarize four key advantages of emission taxes versus emission standards or technology requirements. I will also state two general principles concerning their role in environmental policy. The points I make today are supported by extensive theoretical and empirical research, which we will not have time to discuss in detail. But I am happy to provide more detail on this material during the discussion time.

Four Key Advantages

1. Cost Effectiveness

An emission tax system minimizes the social cost of achieving an abatement target. The technical term here is the “equimarginal criterion”. Different polluters face different costs of reducing emissions. Unlike standards, emission charges automatically allocate abatement activity among polluters in such a way

as to minimize the cost to society of the environmental improvement. For industries with wide variations in technology, age of plant, scale of operations, etc., these savings can be substantial.

2. Dynamic Incentives

Under emission charges, polluters have a strong incentive for continual innovation in pollution control technology. This is not true of standards. In fact, many common forms of emission standards inadvertently retard the development of new emission control technology. Without innovation and technological improvement, the long run cost of environmental protection will be higher than it otherwise would be.

3. Revenue Recycling

Pollution reduction is a costly activity. Whether policies take the form of standards or taxes, they increase consumer prices and reduce real wages. Some of the increased costs are simply deadweight losses. But some accrue to the polluters themselves in the form of what are called "scarcity rents." Emission taxes capture these rents and return them to the policy maker. These revenues can be used to reduce other taxes, in order to offset the loss in household real income caused by the emission control policy.

Alternately, revenue can be used for implementation incentives. Under this scheme the revenues are returned to the polluters themselves in the form of a subsidy to, say, output or employment. While such a revenue recycling rule offers less benefit to society as a whole, it may be the key to winning industry acceptance of an emission tax policy, as was the case with the Swedish tax on NO_x emissions.

4. Information

When regulators are setting standards, they need information from industry about the costs of proposed emission reductions. Under a standards regime, firms have an incentive to overestimate their abatement costs. But if firms expect an emissions tax policy instead, it can be shown that they have no

incentive to exaggerate their abatement costs. In other words, if firms overstate their abatement costs, and the tax is implemented on the basis of their reports, they will end up worse off than if they had reported the truth.

In addition, once an emission tax is implemented, the market response to the tax reveals important information which, if the regulator knows how to interpret it, can be used to refine the policy and enhance its overall efficiency. The market response to standards however does not generate any such information.

Two General Issues

No Free Lunch

Pollution control is costly for society. The capital, labour and materials that are diverted into emission reduction are the *costs*, not the benefits, to society, of the policy. These factors have to be taken out of the production of other goods and services which, were it not for the pollution control regulation, consumers would have preferred to receive. The benefits of pollution policy are the improvements we achieve in environmental quality, not the “jobs created” in pollution control industries. In some cases, the benefits are not worth the costs. It is important that we don't fudge this fact by mistakenly counting some costs as benefits. The genius of emission taxes is that they minimize the costs of environmental policy, but they do not eliminate these costs.

Target Carefully

There is a risk that “green taxes” will be resisted because they appear just to be a sugar coating on a plain old revenue-generating instrument. To be of environmental benefit, an emission tax must be on the emission itself, not some related activity. For instance, the US Superfund is financed by so-called “green taxes” on chemical feedstocks. But these taxes do not exert any direct leverage on point source emissions, so they are not real green taxes. Some examples of so-called “environmental taxes” in recent years cannot be

connected to an obvious environmental improvement, and as such these measures may only serve to raise suspicions about the whole concept. It is important to keep in mind that emission taxes must be on emissions themselves if they are to yield an environmental benefit.