

ELIMINATING ENVIRONMENTAL PROBLEMS: FROM DISCRETIONARY POLICY TO MARKET SOLUTIONS

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Abstract

Environmental problems have become in the last decades a topic of large interest. Economists have analyzed the issue from different perspectives, in an attempt to find the most effective solution for the preservation of the environment. Although significant progress has been made, there is still much room left for further improvement both in the quality of the scientific debate and in the choice of practical policy tools.

1. Introduction

Environmental problems have become in the last decades a topic of large interest. Economists have analyzed the issue from different perspectives, in an attempt to find the most effective solution for the preservation of the environment. Although significant progress has been made, there is still much room left for further improvement both in the quality of the scientific debate and in the choice of practical policy tools.

This paper intends to put in a proper perspective the debate over environment protection, making a short review of the history of ideas concerning this subject. It argues that the property rights paradigm represents the most useful approach to environment issues.

2. How to deal with environmental problems 1: present environmental policy

Public discretionary solutions to contain environmental problems include taxation and tradeable permits

A. Taxation

Taxes are one of the oldest forms of pollution control. The idea of the Optimal Pigovian Tax is simple: internalize costs of pollution. This can be done

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by imposing a tax of t on each unit produced. As pleasant as this approach might look like, it is nearly impossible to calculate the optimal rate of taxation because external costs are subjective and their measurement is therefore impossible. There is also the public choice argument against such a policy. Special interest groups, like climatologists, economists and environmental groups would gain from increased government intervention in the environment and will dictate government policy in the future. Further, as a pragmatic issue, taxes cannot be applied internationally. But in fact, some countries are polluted to a large extent by foreign countries (for example, 85% of Norway's pollution comes from England). Thus, the attempt to reduce environmental problems by taxation is challenged by serious factors.

B. Tradeable permits

Another solution to reduce pollution consist in the issuance of Tradable Permits (TP). It combines the features of a public measure (the target for pollution reduction is first established by the state; the state also establishes a specific regulatory framework for exchanging TPs) with those of a private solution (TPs are exchanged on the market and a free price emerges, indicating the costs to be borne by the polluter).

The concept of the pollution permit has become an increasingly popular topic of discussion for environmentalists in recent years, although the idea has been in existence since at least 1960s.

The government issues permits in exactly the number needed to produce the desired emission level. They give or sell its holder the right to pollute for a certain amount and they are freely transferable; they can be bought and sold on the market, even internationally, thus they act as property rights.

Establishing a market in tradeable pollution permits leads to a reduction of environmental problems because it becomes costly to continue to pollute. Firms that cannot achieve the targeted level have the option to purchase a permit from those companies that managed to reduce their level of pollution beyond the amount required by the government. Businesses can either buy permits or invest in technology to reduce pollution emissions - whichever approach saves them money. As such, companies are stimulated to find ways to decrease pollution.

On such a market, the demand for permits could increase for speculative or precautionary reasons. For example environmental organizations and environment friendly groups could use their own resources to by permits in order to hoard them. Thus, the number of emission permits available for industrial buyers will be limited, which will determine a drastic reduction of polluting activities (and perhaps their relocation).

For the system to be effective there needs to be common acceptance of the legal framework for the trading of permits and regulation of the amount of pollution produced. The Kyoto Summit on Climate Change (held in December

1997) witnessed a decisive move towards a greater use of internationally traded pollution permits – based on the idea that each country is required to achieve a specific percentage reduction in pollutants such as CO₂.

Potential problems with traded pollution permits:

- How are permitted levels of pollution decided? If based on current production levels they may be no advantage for firms that have *already* taken steps to control their pollution emissions
- Traded permits may see pollution being concentrated in certain geographical areas. At the Kyoto Summit, developing countries were not required to make reductions in pollution – but could be given credits for “certified reductions” in pollution that could be then traded with other countries. This might allow countries such as the United States to buy up pollution permits from LDC's (including many former high polluting countries in Eastern Europe) – and avoid the need to reduce pollution themselves
- There are likely to be high administrative costs associated with monitoring pollution emissions – particularly if the number of firms involved is very large.

Tradeable permits represent only second-best solutions to the problem of pollution or species exhaustion. “This system could, in some cases, be somewhat more efficient than those currently employed, although it leaves a great weight on bureaucratic intervention to fix, for example, prices and the total amount of pollution or fishing which can be carried out... Second-best solutions are parallel to those ‘market socialism’ reforms that were so deep a failure in the former communist countries of Eastern Europe” (de Soto, 1997, p. 186).

3. How to deal with environmental problems 2: free market environmentalism

Arguments for creating new property rights in the environment are generally based on arguments that market failure caused by externalities requires corrective government intervention, or that the market failure itself is solely due to inadequately specified property rights and it can be fixed by completely specifying private property rights in the environmental goods.

Complete specification of property rights would resolve environmental problems by internalising costs and relying on the incentives of private owners to conserve resources for the future.

The key to gaining agreement on a substantial and effective international climate change agreement is to better align the currently disparate incentive structures of the players. The incentive structure can be built as a result of a political process, or as the effect of the market process. The political process tends in its very nature to externalize costs through the coercive mechanisms of

collective decision. Instead, the market process has the merit of internalizing the employment costs of resources and eliminating the free riding phenomenon.

Authors such as Terry Anderson and Donald Leal (2001) have documented numerous examples of environmental goods that can be and are supplied successfully in private markets, and empirical researchers examining state-centered models of environmental management have highlighted numerous cases of government failure. For land-based environmental assets such as forests and minerals, for example, evidence suggests that private-property solutions are highly successful in generating the necessary incentives that encourage resource conservation and help to overcome the problems of “free riding” associated with open-access conditions (De Alessi 2003). Thus, the record of forest management in Sweden under a predominantly private regime has been noticeably more impressive than the record of forest management under government ownership in the United States, Canada, and Great Britain. Similarly, the private ownership of wildlife in countries such as Botswana has had markedly more success in protecting stocks than government-sponsored trade bans on ivory products that have been put in place over much of Africa (Sugg and Kreuter 1994).

“A true market system would include both components—a price system and recognition of property rights. Tradeable permits alone are an incomplete solution. There is, however, a true market solution that depends on the price system without violating property rights. The first step is to establish a system of clearly defined and enforceable property rights. Once clearly defined, market forces will take over and determine the optimal level of pollution. If a firm creates pollution without first entering into an agreement, or if the parties cannot come to an agreement fixing the cost and degree of pollution, then the court system could be used to assess damages. Such a system provides an incentive for companies to reduce the amount of discharge or bear the full cost of their actions.” (Block and McGee, 1994))

Therefore, the free market solution for environmental problems is privatisation. Since pollution problems occur because of a lack of defined property rights, broad-scaled privatisation of the public sector would clearly solve this dilemma. If most public goods were privatised, the property right structure was clear and pollution problems could be solved on an interpersonal base.

Comparison between different strategies to contain environmental problems

	Taxation	Tradeable Permits	Property Rights
Costs	Maximum	Variable	Dependent on individuals' preferences
Level of emissions	Depends on how rate is set	Capped, but it may fall due to flexibility in response	Dependent on individuals' preferences
Certainty	Mixed as tax unlikely	Depends on consistency	

	to fall but can be raised more easily than other forms of regulation can be changed	of administration, built/in review arrangements and whether changes are compensated	
Other issues	Can be seen as revenue raising device. Can be conflict between objectives, ie, less pollution means less revenue Impossible to calculate optimal taxation Cannot be applied internationally	Difficult to extend trading inter-regionally	Resolves ethical issues associated with environmental problems

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