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Fiscal Affairs Department

**Tax Policy and the Environment:
Theory and Practice**

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Abstract

This paper provides a framework for examining environment taxes. It reviews the theoretical efficiency of three types of environment taxes: taxes on emissions or Pigouvian taxes; taxes on productive inputs or consumer goods whose use is related to environmental damage; and environment-related provisions in other taxes. A survey of environment taxes in 42 countries--drawn from developing countries, economies in transition, and industrial countries--illustrates that the use of environment taxes differs dramatically from the recommendations of environment tax theory. This divergence between the theory and practice of environment taxes can be attributed to several factors; environment taxes are difficult to implement, there are many factors that impede their effectiveness, and their introduction may be discouraged by their implications for other policy objectives.

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<u>Contents</u>	<u>Page</u>
Summary	iv
Introduction	1
I. Theoretical Aspects of Environment Taxes	1
1. Pigouvian taxes	2
2. Indirect environment taxes	3
3. Environment-related provisions in other taxes	5
II. A Survey of Environment Taxes in Selected Countries	6
1. Pigouvian taxes	6
2. Indirect environment taxes	8
3. Environment-related provisions in other taxes	8
III. The Scope for Environment Taxes	10
1. Design and administration of environment taxes	11
a. Design	11
b. Administration	11
2. Economic and structural conditions	12
a. Macroeconomic stability	12
b. State-owned enterprises	13
c. Market failure	13
3. Other policy objectives	16
a. Economic output	16
b. Employment	17
c. International competitiveness	17
d. Equity	18
IV. Policy Implications and Conclusions	18
Text Tables	
1. Selected Countries: Environment Taxes	7
2. Major Industrial Sources of Pollution	14
3. Selected Countries: Environmental Damage Estimates	15
Appendix I. A Survey of Environment Taxes	20
Tables	
4. Selected Countries: Environment-Related Aspects of Taxes Pigouvian Taxes and Taxes on Goods and Services	21
5. Selected Countries: Environment-Related Aspects of Taxes on Income and Profits, Property, and Motor Vehicles	28

<u>Contents</u>	<u>Page</u>
Appendix II. Tax Incentives with Unintended Harmful Environmental Implications	37
Charts	
1. Pigouvian Taxes	2a
2. Indirect Environment Taxes	4a
3. Environmentally Damaging Tax Incentives	38
References	39

Summary

This paper reviews the effectiveness of three types of environment taxes--Pigouvian taxes (per unit taxes on emissions); taxes on inputs or consumer goods whose use is related to environmental damage; and environment-related provisions in other taxes--and surveys the use of these taxes in 42 developing countries, economies in transition, and industrial countries.

The paper finds a wide gulf between the theory and practice of environment taxation. The three types of environment taxes are ranked in terms of conventional efficiency criteria: Pigouvian taxes, with appropriately set tax rates, are efficient; taxes imposed on goods whose use is linked to environmental damage are not usually efficient and are ranked second; and environment-related provisions in other taxes are ranked third. The survey suggests that environment taxes are not used extensively and that Pigouvian taxes, the efficient tax solution to environmental damage, are not generally employed. The conventional efficiency argument in favor of environment taxes is thus typically invalidated by the widespread use of taxes other than Pigouvian taxes.

A number of possible explanations for the wide gulf between the theory and practice of environment taxation are identified: (1) design and implementation factors vary significantly across countries, with the consequence that environment taxes may not be straightforward to use; (2) the effectiveness of environment taxes can be hampered by macroeconomic instability, soft state-owned enterprise budget constraints, and a failure in markets for substitutes for the taxed item; and (3) efficient environment taxes may conflict with other policy objectives such as economic output, employment, international competitiveness, and equity.

The preceding three impediments apply, in varying degrees, to all types of environment taxes, but the difficulty in designing and administering Pigouvian taxes, especially in developing countries, is the most significant obstacle to mitigating environmental damage through the tax system. In circumstances where Pigouvian taxes cannot be employed, environment taxes are not necessarily the best policy. Consequently, in practice, a combination of policies is likely to be required to address environmental damage. The extent to which use is made of environment taxes in these circumstances is defined by their relative cost effectiveness.