

*Economic Research Institute Study Paper*

*ERI #2002-23*

**AN EFFICIENT MECHANISM TO CONTROL CORRELATED  
EXTERNALITIES: REDISTRIBUTIVE TRANSFERS AND  
THE COEXISTENCE OF REGIONAL AND GLOBAL  
POLLUTION PERMIT MARKETS**

**by**

**ARTHUR J. CAPLAN**

**Department of Economics  
Utah State University  
3530 Old Main Hill  
Logan, UT 84322-3530**

**EMILSON C.D. SILVA**

**Department of Economics  
Tulane University  
New Orleans, LA 70118-5698**

**December 2002**

**AN EFFICIENT MECHANISM TO CONTROL CORRELATED  
EXTERNALITIES: REDISTRIBUTIVE TRANSFERS AND  
THE COEXISTENCE OF REGIONAL AND GLOBAL  
POLLUTION PERMIT MARKETS**

**Arthur J. Caplan, Assistant Professor  
Emilson C.D. Silva**

**Department of Economics  
Utah State University  
3530 Old Main Hill  
Logan, UT 84322-3530**

The analyses and views reported in this paper are those of the author(s). They are not necessarily endorsed by the Department of Economics or by Utah State University.

Utah State University is committed to the policy that all persons shall have equal access to its programs and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

Information on other titles in this series may be obtained from: Department of Economics, Utah State University, 3530 Old Main Hill, Logan, UT 84322-3530.

**Copyright © 2002 by Arthur J. Caplan and Emilson C.D. Silva.** All rights reserved. Readers may make verbatim copies of this document for noncommercial purposes by any means, provided that this copyright notice appears on all such copies.

**AN EFFICIENT MECHANISM TO CONTROL CORRELATED  
EXTERNALITIES: REDISTRIBUTIVE TRANSFERS AND  
THE COEXISTENCE OF REGIONAL AND GLOBAL  
POLLUTION PERMIT MARKETS**

**ABSTRACT**

We compare tradable permit markets and emission taxes as self-enforcing mechanisms to control correlated externality problems. By “correlated” we mean multiple pollutants that are jointly produced by a single source but which simultaneously cause differentiated regional and global externalities (e.g., smog and global warming). By “self-enforcing” we mean mechanisms that account for the endogeneity that exists between competing jurisdictions in the setting of environmental policy within a federation of regions. We find that joint domestic and international permit markets are Pareto efficient, while joint emissions taxes are not.

*JEL* classification: C72, D62, D78, H41, H77, Q28.