

State enforcement of federal standards: Implications for interstate pollution

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Abstract

This paper explores the relationship between interstate air pollution and the division of power between federal and state agencies in setting and enforcing standards. In the context of the US Clean Air Act we argue that the EPA is able to monitor the adoption of technology-based standards more closely than it can monitor state-level enforcement, and that this causes an effective division of control between federal and state agencies. Our analysis offers three main insights into the interstate pollution problem in this setting. First, states have an incentive to enforce standards less stringently on firms located close to downwind borders, and this leads to excessive interstate pollution in equilibrium. Second, there can arise an inherent substitutability in the regulatory problem between strict standards and compliance effort, and this creates a strategic linkage between the federal policy on standards and state policies on enforcement. In particular, a tighter federal standard can induce less selective enforcement but can also lead to less enforcement overall. Third, states will attempt to neutralize the impact of location-based federal standards (that specifically target interstate pollution) in a way that actually exacerbates the underlying enforcement problem.

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1. Introduction

Interstate pollution is an important issue in the US and in many other federations around the world. Rising concern over transboundary pollution flows within the US led to the passage of new

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legislation in March 2005 which the Environmental Protection Agency (EPA) claimed would “result in the largest pollution reductions and health benefits of any air rule in more than a decade” [EPA News Release, 10 March 2005]. The intent of this new legislation – the Clean Air Interstate Rule (CAIR) – is to impose tighter restrictions on polluting facilities whose emissions tend to flow across state borders. The legislation focuses on 28 eastern states, where interstate air pollution is deemed to be a particular problem. CAIR “will require all 28 states to be good neighbors, helping states downwind by controlling airborne emissions at their source” [EPA News Release, 10 March 2005].

This new legislation will support and supplement existing provisions of the Clean Air Act (CAA) designed to limit the flow of transboundary pollution. The CAA delegates much of the implementation of the Act to the states, but each state must submit a state implementation plan for approval by the EPA. This gives the EPA ultimate control over the standards imposed on polluting facilities (which are primarily technology-based and relatively easy for the EPA to monitor).¹ Moreover, Section 110 of the CAA specifically requires state implementation plans to contain provisions that prohibit “any source . . . within the state from emitting any air pollutant in amounts which will contribute significantly to non-attainment” of national air quality standards in another state. This requirement effectively prevents a state from imposing lax standards on facilities located close to state borders.

These federal legislative measures with respect to standards are effective in controlling interstate pollution only to the extent that on-going compliance is actually achieved. Responsibility for enforcement under the CAA is for the most part delegated to the states. The EPA is responsible for over-seeing state-level enforcement but this oversight is limited by the nature of enforcement activity in practice. Enforcement actions used by state agencies range from simple oral warnings to fully fledged judicial proceedings – with a series of escalating actions in between – but only “formal” enforcement actions (those actions backed by some degree of legal force) are typically reported to EPA.² Yet *informal* enforcement actions are far more important on a day-to-day basis. According to the Environmental Council of the States, about 90% of all state administrative enforcement actions (across all federal environmental programs) are informal in nature.³ These informal actions are not tracked by EPA, due to the information processing burden involved. This lack of federal oversight means that states can in practice exercise considerable discretion with respect to enforcement. In particular, states may be able to weaken the impact of federal measures against interstate air pollution by enforcing standards less stringently on facilities located closer to downwind state borders.

To what extent does this selective enforcement occur in practice? In [Hutchinson and Kennedy \(2006\)](#) we examine violation rates among facilities regulated under the CAA for the period January 2000 to April 2003 and find a significant eastern-border effect: *ceteris paribus*, violation rates are higher for facilities located closer to eastern state borders. Since prevailing winds in the US tend to blow from west to east, this finding suggests that states are indeed more lenient on facilities whose emissions flow into a downwind neighboring state. The magnitude of this eastern border effect is large enough to be of practical concern to policy makers. Other empirical studies

¹ See [Revesz \(1996\)](#) and [Hutchinson and Kennedy \(2006\)](#) for more detail on emission standards under the CAA, and federal versus state roles in setting those standards.

² See Section 2.1 for further discussion on enforcement actions in practice.

³ For example, in 1999 states undertook 82,156 administrative enforcement actions. Of these, 73,968 were “informal” in nature and not tracked by EPA. These figures do not include judicial proceedings but these constitute a small fraction of state enforcement actions. See [Brown and Green \(2001\)](#), Table 7.

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