

Quota Enforcement in Resource Industries: Self-Reporting and Differentiated Inspections

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Abstract

Quotas or permits are frequently used in the management of renewable resources and emissions. However, in many industries there is concern about the basic effectiveness of quotas due to non-compliance. We develop an enforcement model of a quota-regulated resource and focus on a situation with significant non-compliance and exogenous constraints on fines and enforcement budget. We propose a new enforcement system based on self-reporting of excess extraction and explicit differentiation of inspection rates based on compliance history. In particular, we use state-dependent enforcement to induce firms to self-report excess extraction. We show that such system increases the effectiveness of quota management by allowing the regulator to implement a wider range of aggregate extraction targets than under traditional enforcement, while ensuring an efficient allocation of aggregate extraction. In addition, inspection costs can be reduced without reductions in welfare.