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An empirical study of federal law versus local environmental enforcement



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ABSTRACT

A potential problem with local enforcement of national legislation is the varying degrees of implementation that the decentralized structure may create. To study the severity of this problem, induced by the mismatch of local and national incentives, I look at the enforcement of the Swedish Environmental Code which is enforced at the local level. I measure enforcement in terms of environmental fines issued in each of Sweden's 290 municipalities. I argue that the Green Party values the tradeoff between business friendliness and environmental concerns differently from other parties. Using both a difference-in-differences approach and IV, I find that municipalities with the Green Party in the ruling coalition issue more fines than other municipalities. This is problematic from an efficiency and equality perspective. The result suggests that politicians do not only affect environmental policy, but also that for a given policy, they can affect the outcome through implementation and enforcement.

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Introduction

Theory and practice can both be used to argue for either centralized or decentralized provision of a public good. From a theoretical point of view, *Oates's decentralization theorem* (Oates, 1972) essentially states that without externalities, local provision of a public good is optimal while introducing externalities makes the optimal provision level unclear. Regarding enforcement of environmental regulations, some potential benefits of local enforcement can be noted from an applied point of view.¹ Local governments may have information advantages. Moreover, environmental aspects are often closely related to other local issues, such as urban planning. But local enforcement of environmental regulations, or the lack thereof, might also produce negative externalities. Lenient enforcement can help the municipality to appear business friendly (DS 2000:67, p. 18) and attract firms, while the costs of a bad environmental situation are shared also by the surrounding municipalities. Fredriksson et al. (2010) show in a theoretical model that this set up leads to a *home bias* where local politicians may favor their local district and impose sub-optimal regulations.² The paper is concluded with a request for future empirical studies

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¹ Traditionally, law enforcement has also been classified as a *quasi*-public good since excludability is possible. This distinction is, however, not important for my study.

² Fredriksson et al. denote this *majority bias* since the results are derived in a majority election system where politicians set environmental taxes on industries depending on how pollution affects local (home) districts that are crucial for elections. To avoid misunderstandings referring to the majorities in my paper, I use the term *home bias*.

to “*be on the lookout for [home] bias as an environmental policy determinant*”. It is my aim to start filling this gap in the literature by utilizing characteristics of Swedish environmental law enforcement to study how enforcement of environmental laws varies across Swedish municipalities.

I want to test if there are systematic differences across local governments in the application of environmental laws. Such differences are mainly problematic for two reasons: legal security and efficiency.³ If firms face different risks of being penalized when they are caught in violation of national legislation depending on the local government, this is a sign of inequality before the law. Moreover, local governments that make their own interpretation of national legislation can cause inefficiencies since their incentives to take externalities into account when deciding on enforcement stringency may differ from those of a national policy maker.

As a proxy for environmental enforcement, I use the normalized number of environmental sanction charges (fines hereafter) issued across Swedish municipalities. The fines are based on the Swedish Environmental Code which contains all Swedish environmental legislation. The legislation is national and thus, the same legislation applies to all municipalities. There is room for local variation in enforcement in this study since ever since the introduction of the Swedish Environmental Code in 1999, environmental regulations has to a large extent been enforced at a local government (municipality) level. However, since the issuing of fines is based on national legislation, everything else equal, no significant systematic differences ought to be found.

To detect signs of a systematic home bias, I focus on the Green Party since it can be assumed to have a different tradeoff between business and environmental friendliness as compared to other parties. The existence of a varying enforcement of environmental regulations can then be motivated by the political economics literature on partisan politicians, see e.g. chapter 5 in [Persson and Tabellini \(2000\)](#). In this literature, for a given set of electorate preferences, parties' and politicians' private preferences influence policy, or in this case, implementation of policy. I study the potential effect of the Green Party being part of the ruling political coalition on the number of environmental fines issued across municipalities. The effect is consistently estimated to be positive across different models and identification strategies. The precision of the estimates varies, however.

To overcome the inherent difficulties in estimating effects of endogenously elected parties, I apply two identification strategies.⁴ My main strategy is a difference-in-difference approach where the treatment group is defined to be the municipalities where the Green Party was included in the ruling coalition during any or both term periods 2003–2006 and 2007–2010. The second identification strategy applied is an instrumental variable approach. The absence of other alternatives (local parties) with which to form a coalition for either the left or the right wing will be used as an instrument for Green Party inclusion in the ruling coalition in municipalities with an unclear election outcome. The IV estimates indicate a larger effect but is much less precise. The data is gathered in the Swedish political system but the setting is applicable also in other countries such as Germany and the U.S., or in other areas of public policy such as animal welfare, food inspections or emission control.

Different potential mechanisms through which political parties can affect enforcement are discussed in the paper. Utilizing the fact that some municipalities (voluntarily) report the number of inspections and the share of reviewed environmental reports, and that the net cost of the environmental board varies, I evaluate these proposed mechanisms. There is also anecdotal evidence of direct political pressure on local environmental offices. In different surveys, between one quarter and one third of the environmental officers have stated that political influence obstructs an efficient enforcement of the environmental code ([Jacobsson and Källmén, 2012; DS 2000:67](#)). For example, in one municipality in southern Sweden, the politicians refused to affirm two fines issued by environmental inspectors and motivated this by writing that “*the electorate must demand [of the politicians] to do their utmost to make [the municipality] not look business unfriendly*” ([DS 2000:67, p. 160f](#)). More examples are provided in the result section.

Few empirical studies have been conducted on the political economy of environmental regulation; see [Dijkstra and Fredriksson \(2010\)](#) for a brief survey. [Boskovic \(2011\)](#) develops a structural model where states face a tradeoff between air quality and business friendliness. Using U.S. data, he finds that states where enforcement is decentralized also increase their pollution levels and attract more firms. This is a very interesting finding. I cannot investigate this relationship with Swedish data since there is no exogenous change in decentralization of environmental enforcement. What distinguishes my paper from [Boskovic \(2011\)](#) is my focus on specific political parties and their influence on the enforcement. Moreover, I study the instruments of environmental enforcement rather than the direct environmental effect.

The same differences can be found between my paper and [Sigman \(2004\)](#). Sigman investigates the effect of decentralization on water quality in streams that run across states. Her findings show that decentralization does not have any effect on the water quality within a state. However, the water quality in downstream states is negatively affected by upstream states gaining control over environmental regulation and enforcement implying free riding.

My paper also relates to the political economy literature on the relationship between parties' and politicians' preferences, and public policy, see e.g. [Besley and Coate \(1997\)](#), [Chattopadhyay and Duflo \(2004\)](#), [Folke \(2010\)](#), [Persson et al. \(2007\)](#), or [Svaleryd \(2009\)](#). In this strand of literature, parties and politicians shape public policy not only by representing the

³ The seriousness of these problems also depends on the interaction between the impact of the externalities, how local preferences differ and to what extent national legislation allows for differences in enforcement.

⁴ See, for example, [Besley and Case \(2000\)](#) for a discussion of these problems.

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