

Kyoto Protocol cooperation: Does government corruption facilitate environmental lobbying?

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Abstract Does environmental lobbying affect the probability of environmental treaty ratification? Does the level of government corruption play a role for the success of such lobbying? In this paper, we propose that a more corruptible government may be more responsive to the demands of the environmental lobby. We use several stratified hazard models and panel data from 170 countries on the timing of Kyoto Protocol ratification to test this hypothesis. We find that increased environmental lobby group activity raises the probability of ratification, and the effect rises with the degree of corruption.

Keywords Corruption · Political economy · Agreements · Ratification · Environmentalism

1 Introduction

The ratification stage of an international environmental agreement (IEA) is a crucial part of cooperation on global pollution problems. Relatively little is known about which factors contribute to IEA ratification (or the absence of it), although domestic politics and the degree of democracy are often viewed as important.¹ In this paper, we explore the roles of govern-

¹Murdoch et al. (2003 p. 360) argue that “The Kyoto Protocol also indicates that lobbying interests may also influence the ratification stage”. On the role of democracy, see for example Congleton (1992), Murdoch and Sandler (1997), Fredriksson and Gaston (2000), Neumayer (2002a, 2002b), and Beron et al. (2003). In a study of the Helsinki Protocol on sulphur emissions, Murdoch et al. (2003) study both the participation decision and the degree of participation, and find a weaker effect of democracy than many other studies. See Congleton (2001) for a useful survey of the literature on the political economy of environmental treaties.

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ment corruption and *environmental* lobby groups for IEA ratification, with a particular focus on the Kyoto Protocol. Ratification was clearly a pivotal stage of the Kyoto process, with the Russian Federation ratifying only in late 2004, bringing the treaty into force, and the United States having withdrawn completely.²

Our inquiry is motivated by, for example, the observation that Mexico ratified the Kyoto Protocol almost two years earlier than South Africa, despite both countries having eleven environmental lobby groups and being at comparable levels of economic development.³ Note that Mexico has a higher level of government corruption (lower government integrity) than South Africa.⁴ More generally, Fig. 1 points in the direction of an important interaction effect between environmental lobby group strength and governmental integrity. It shows the average ratification delay in days for four groups of countries: (a) countries with below-median environmental lobby group strength and below-median governmental integrity (using World Bank data, see Table 2); (b) countries with above-median environmental strength and below-median integrity; (c) countries with below-median environmental strength and above-median integrity; and (d) countries that are above the median both in terms of environmental lobby group strength and governmental integrity. Figure 1 suggests that the combination of high environmental lobby group strength and low government integrity speeds up ratification.

In this paper we posit that a government will be more likely to ratify an IEA the stronger the environmental lobby in the country. In turn, we expect this effect to be reinforced if the government is more corruptible because such a government will be more responsive to lobbies' demands. Our empirical work uses panel data on the timing of Kyoto Protocol ratification to test these hypotheses. Our basic models employ a stratified semi-parametric Cox proportional hazard model, which allows the baseline hazard of ratification to differ across groups (Cox and Oakes 1984).⁵ Stratification is important since two groups of countries ("Annex 1",⁶ comprising the OECD and the former Eastern European countries with greater responsibilities; and "non-Annex 1") have widely different responsibilities under the Protocol, which may affect the likelihood of ratification. In addition, we also use stratified fully parametric Weibull, Gompertz, lognormal, and logit models.

We find that environmental lobbying is empirically important for the timing of Kyoto Protocol ratification. Countries with a greater number of environmental lobby groups (corresponding to a greater number of environmentalists) ratify the Kyoto Protocol *earlier*, i.e.,

²To gain legal force, 55 countries representing 55% of Annex 1 country emissions had to ratify the Kyoto Protocol. As of April 17, 2007, 171 countries representing 61.6% of Annex 1 year 1990 emissions had ratified (or equivalently, acceded to) the Protocol (see http://unfccc.int/kyoto_protocol/background/status_of_ratification/items/2613.php).

³Our data on environmental lobby groups comes from the International Conservation Union (www.iucn.org).

⁴According to the corruption measures of International Country Risk Guide, Transparency International, and the World Bank (see Table 2 for details), Mexico had average scores of 2.65, 2.66 and -0.351 , respectively, over the period of our study (higher scores signal less governmental corruption). South Africa's respective scores are 3.025, 4.16 and 0.431.

⁵Since real world ratification processes take place over time, duration models (which capture *when* treaty ratification occurs) are likely to capture the most amount of information regarding ratification probabilities. Most earlier empirical studies of environmental treaty ratification probabilities focus on the event, rather than the timing of ratification, thus ignoring some valuable information. In our view, early ratifying countries signal their commitment to the IEA, raising the likelihood of its eventual success. The Cox proportional hazard model has previously been used in the literature (see, e.g., Fredriksson and Gaston 2000; Neumayer 2002a), and we therefore select this as our benchmark model.

⁶See http://unfccc.int/parties_and_observers/parties/annex_i/items/2774.php.