Political Institutions, Political Careers and Environmental Policy

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Abstract

High party discipline and party strength induces legislators to commit to promised policies also after being elected. This is because party leaders are able to punish deviations and reward behavior that is in the party's interest. Political stability induces party leaders to take a longer-term perspective. We develop the hypothesis that: (i) the effects of party discipline and party strength on the stringency of environmental policy are conditional on the degree of political stability; (ii) the effect of political stability is conditional on the levels of party discipline and party strength. Our empirical findings support these hypotheses.

Keywords: Environmental regulations; political institutions; political instability; party discipline, party strength, career, climate change.

JEL Codes: D72; D78; Q58; H23.

I. Introduction

Why does Russia have sharply weaker environmental policies in place than neighbor Lithuania, and why does Chile have weaker policies than Uruguay?[1] In this paper, we argue that "party discipline", "party strength", and political instability are important determinants of environmental policy outcomes.[2]

The level of party discipline may be defined as the degree to which elected legislators keep their party's campaign promises after being elected (Grossman and Helpman, 2005).[3] The level of party strength is related to the extent a party has credible ideological positions and a well-maintained party machine at both the grassroots and national level (Enikolopov and Zhuravskaya, 2007; Keefer and Khemani, 2009).[4] A parallel literature suggests that the level of political stability is an important determinant of policy outcomes, including of deforestation rates, resource extraction rates and environmental policies (see, e.g., Deacon, 1994; Bohn and Deacon, 2000; Fredriksson and Svensson, 2003).[5] The above strands of literature have so far developed independently of each other. We begin to remedy this gap in the literature.

[1] For example, the *Institutional Capacity* index by CIESIN (2002) measures the extent to which countries have in place institutions that foster effective responses to environmental problems (higher values represent more stringent policies). Russia scores 26.8, Lithuania 50.9, Chile 57.5, and Uruguay 68.1.

[2] The literature discussing "party discipline" and "party strength" includes, e.g., Riker (1964), Mayhew (1986), Carey and Shugart (1995), Grossman and Helpman (2005), Carey (2007), Enikolopov and Zhuravskaya (2007), Fredriksson and Wollscheid (2010), and Primo and Snyder (2010).

[3] Golden and Picci (2008) find that in Italy (with an open list system; see further below) the government parties are unable to discipline their own members of parliament, and are therefore unable to target pork barrel spending to their favored districts (see also Weingast *et al.*, 1988). Fredriksson and Wollscheid (2010) establish that greater party discipline raises environmental policy strictness when the level of corruption is low, but reduces the strictness when corruption is high. However, since they do not investigate the impact of party strength or the role of political stability, they do not fully address the policy impact of legislators' career choices. McGillivray (1997) studies trade policy in the majoritarian systems Canada (high party discipline) and the United States (low party discipline) with a focus on safe and marginal districts. In Canada, industries concentrated in marginal districts receive higher protection, while industries located in safe districts receive greater protection in the United States.

[4] Mayhew (1986) and Primo and Snyder (2010) find that distributive spending is smaller in U.S. states with strong party organizations. Enikolopov and Zhuravskaya (2007) find that the outcome of fiscal decentralization (measured as economic growth, quality of government, and public good provision) improves when national parties are stronger.

[5] Persson and Svensson (1989), Cukierman et al. (1992), Alesina and Perotti (1996), Svensson (1998), Bohn and Deacon (2000), and Campos and Nugent (2003, 2005), e.g., study the relationships between political instability, macroeconomic policies and private investment choices.

Greater party discipline induces office holders to commit to a greater degree to the party's promised policies after being elected, as this is likely to help their future political careers (Longley, 1998; Grossman and Helpman, 2005; Hankla, 2006; Carey, 2007).[6] Legislative party leaders often have control over nominations for reelection to the same or another office, appointed posts within the national government, and campaign finance and political support. Thus, national party leaders have the ability to promote or hamper a legislator's career prospects, and this is conditional on the legislator's individual behavior. Moreover, national party strength also leads local politicians and Congressional level legislators to pay more attention to the wishes of the national party bosses (Riker, 1964; Loewenberg and Patterson, 1979; Shugart, 1998; Enikolopov and Zhuravskaya, 2007; Primo and Snyder, 2010). Stronger parties are able to furnish more successful careers to their representatives, as they are able to provide greater political and financial support, or help launch a career within the national government.

What are the policy effects of party discipline and party strength? We argue that both greater party discipline and stronger national political parties bring many policies closer to their optimal levels, assuming a relatively high level of political stability. This is because these institutions shift policy decisions to the national level, and reduce the influence of the local constituency. National party leaders put a higher value on the national party's overall electoral future than local districts' representatives, and thus on overall national welfare (Grossman and Helpman, 2005; Enikolopov and Zhuravskaya, 2007).[7] With low party discipline or low national party strength, local party officials and districts' legislative representatives may ignore national welfare and the national party's electoral future to a greater extent. Instead, their local constituents' more narrow interests carry a relatively heavier weight.

What are the policy effects of increased political stability? As political stability rises, party leaders have a greater probability of being in office long enough to benefit from delivering welfare. Thus,

[6] See, e.g., Best and Cotta (2000), Shabad and Slomczynski (2002), and Jones *et al*. (2002) for descriptions of political careers in several European countries and in Argentina, respectively.

[7] Wittman (1989) argues that national political parties emerge because when political candidates represent districts, there is a tendency to overspend on pork barrel projects. National political parties is a way to internalize the negative externalities that arise as districts attempt to shift costs to other districts.

political stability lengthens the decision-making horizon and will tend to bring policies closer to the optimal level. In Olson's (1991) "roving bandit" theory, a more stable incumbent will find it optimal to steal less today, and to rather formulate policies that build future wealth (see also DeLong and Shleifer, 1993).[8] Similarly, Fredriksson and Svensson (2003) argue that with higher political stability, the government will care more about delivering social welfare and thus tend to set more optimal policies addressing national (or local) environmental problems. Fredriksson and Svensson (2003) find that the policy effect of political stability is conditional on the (exogenous) level of policymaker corruption (corruptibility), however; the incentives of lobby groups need to be taken into account. When the level of corruption is relatively low, a horizon-lengthening effect suggests that environmental policy stringency increases as a result of higher political stability. On the other hand, when the level of corruption is relatively high, higher political stability may help cause *weaker* environmental policy. This is because it makes lobbying and bribery more likely to pay off for lobby groups and thus leads to more intense influence activities.[9] In this paper, we focus on the behavior of national party leaders (and not lobby groups' or other bribe givers' behavior). Thus, we assume that higher political stability brings policy closer to the optimal level environmental policy stringency. Our benchmark assumption is therefore that higher political stability raises the stringency of policies aimed at national environmental problems.

Drawing on the different strands of literature discussed, the effect of party discipline and party strength on policy outcomes can be expected to be *conditional* on the level of political stability. Moreover, the effect of political stability may in turn be expected to be *conditional* on the level of party discipline and party strength, respectively (see further below). Our focus on environmental policy

[8] Deacon (1994) explains that forest preservation is a form of investment. With less volatile or predatory political institutions, the level of uncertainty regarding property rights is lower and the incentive to invest increases (see also Acemoglu, 2005).

[9] Similarly, Campante *et al*. (2009) study the effect of political stability on the endogenous level of corruption, and find a *horizon effect*. Higher political stability reduces the level of corruption due to a longer time horizon. On the other hand, Campante *et al*. (2009) also find a *demand effect* of political stability on the level of corruption, where the amount of bribery increased due to a lower uncertainty faced by bribe givers (see also Olson, 1982). Campante *et al*. (2009) find a U-shaped relationship between political stability and the level of corruption.

appears to be well suited for the analysis at hand since transboundary pollution spillovers across political districts across a nation creates a (well-known) free-riding problem. Thus, a national perspective among legislators may be expected to raise environmental policy stringency, because it is more likely to address national transboundary pollution spillovers to a greater extent (see, e.g., Oates and Portney, 2003). In particular, greater party discipline and party strength, and thus a more national perspective among political representatives should, on the one hand, *raise* environmental policy strictness where the level of political stability is high (and party leaders have a longer time horizon). This is because it reduces the degree of free-riding behavior among local districts and their representatives. When the level of political stability is high, the party's office holders are induced by the party leadership to take a longer term and more national perspective in their decisions addressing environmental problems. This benefits legislators' careers when party discipline and/or party strength are high.

On the other hand, when the degree of political stability is low, greater party discipline (and/or party strength) may be expected to cause *weaker* national environmental policies. This occurs if national-level party politicians' policy choices are severely affected by reduced political stability, leading them to shorten their time horizon and dictate weaker party environmental policy choices to legislators. For this to occur, political instability should have a relatively large impact at the national level.[10]

We also argue that the effect of political stability is conditional on the levels of party discipline and party strength, respectively. When the levels of party discipline and/or party strength are high (and free riding is lower), a reduction in political stability should have a relatively large marginal impact on environmental policy stringency. In this case, party leaders switch their policy preferences towards

[10] The literature provides examples of this situation. For instance, Bardhan and Mookherjee (2000) discuss a model which includes an absence of effective electoral competition due to loyalty biases favoring one party at the local level. Suppose two parties participate in elections at both the national and local levels, and local districts have sharply different party loyalties (perhaps due to socioeconomic or ethnic composition). In each district, the dominant party is the overwhelming favorite. In this case, the electoral outcome is more uncertain at the national level. Moreover, Bardhan and Mookherjee (2000) also argue that the number of competing parties may be greater at the national than at the local level, perhaps due to differences in party strength across districts, or because the stakes are greater at the national level. If more political parties produce a greater number of possible government coalitions, political uncertainty may be greater at the national level. In autocratic countries, political leadership is more centralized and the level of political stability should essentially affect political decisions mainly at the national level (see, e.g., Olson, 1991).

weaker environmental policies as their time horizon is shortened. This should have a relatively substantial policy impact as the party leaders dictate policy to individual legislators. On the other hand, when the levels of party discipline and/or party strength are low, respectively, national party leaders are unable to dictate policy to the same degree. In this case, free riding behavior is already high and the party leaders are consequently not in a position to induce weaker policy stringency to the same extent. Although the shortening of politicians' time horizons may affect policy stringency, the overall marginal impact on policy stringency is likely to be smaller with low party discipline and/or party strength than with high party discipline and/or strength.

Thus, the first objective of this paper is to empirically investigate the effects of party discipline and party strength (and a combination of the two institutions) on environmental policy outcomes, taking the degree of political stability into account. The second objective is to empirically analyze the influence of political stability on the formation of environmental policies, conditional on the levels of party discipline and party strength, respectively (and their combination).

Figs. 1 and 2 indicate that interaction effects of the types discussed above may indeed be present between the degree of party discipline and the level of party strength, respectively (both 0-1 measures from Beck *et al.* 2001), and the level of political stability (using a measure from Kauffmann *et al.* (2003), re-classified as a 0-1 variable in Figs. 1-3).[11] These figures use the Global Stewardship index from CIESIN (2002) as an indicator of the strictness of environmental policy (higher values represent stricter policies; mean=50.50; s.d.=14.01).[12] Fig. 1 suggests that high party discipline is associated with higher environmental policy stringency when the level of political stability is high. However, high party discipline appears to have the opposite effect when the level of political stability is low. Moreover, Fig. 1 also indicates that high political stability has a positive effect on stringency when party discipline is

[11] Beck *et al.* (2001) divide countries into are high and low party discipline countries (see further below). Using Kaufmann *et al.* (2003), we classify countries as above or below the average level of political stability. See Appendix I for descriptive statistics.

[12] The Global Stewardship index measures the degree to which countries cooperate with other countries to reduce negative transboundary environmental impacts.

high, but a smaller (even *negative*) effect on stringency when party discipline is low. Fig. 2 indicates that party strength [political stability] has a similar impact on environmental policy stringency, conditional on the level of political stability [party strength]. Moreover, Fig. 3 suggests that the presence of *both* party discipline and party strength [political stability] have [has] the hypothesized effect on environmental policy, conditional on political stability [the presence of *both* party discipline and party strength].

Utilizing data from 162 countries, we employ the method of propensity score estimation by Rosenbaum and Rubin (1983) and Wooldridge (2002). This methods uses a counterfactual approach that categorizes observations as if they had been randomized (Rubin, 2007). Party discipline arises in electoral systems where the party controls political candidates' access and position on the party's ballot and thus their careers; in such "closed list" systems, politicians primarily please the party leaders (Hix, 2004; Shugart et al., 2005). The national party leaders are in a position to severely hamper the careers of individual legislators who deviate from the party's policy positions while in office (see, e.g., Beck *et al*., 2001).[13] As measures of high party discipline, we utilize two different variables. The first measure comes from Beck *et al*. (2001) and indicates whether the electoral system is "closed list" or "open list". A system receives the classification "closed" if voters cannot express preferences within a party list. The second measure designates a country as having high party discipline if all lower-house legislators are elected through party lists (open or closed) and comes from Persson and Tabellini (2003).

As measure of the strength of national parties we use the average party age from Beck *et al*. (2001), following Enikolopov and Zhuravskaya (2007). This measure is defined as the average age of the two main government parties and the main party in opposition. According to Huntington (1968), a higher age of the main political parties reflects a more stable party system and stronger parties. Local politicians take into account the expected life of their own party when determining their optimal effort

[13] Carey (2007) finds that the level of legislative voting unity in 19 countries is higher where party lists are closed.

allocation inside the party.[14] Finally, we create a combined variable which indicates the presence of *both* high party discipline and high party strength; this is done by interacting the party discipline and party strength variables from Beck *et al*. (2001).

Our index of political stability comes from Kaufmann *et al*. (2003), and combines "several indicators which measure perceptions of the likelihood that the government in power will be destabilized or overthrown by possibly unconstitutional and/or violent means, including domestic violence and terrorism." (p. 3).[15] We evaluate the effects of the above measures on eleven different measures of environmental policy stringency, which include measures of both local and transboundary pollution policies (from CIESIN, 2002; Metschies, 2003; Frankel and Rose, 2005).

Our empirical results suggest, first, that the individual effects of party discipline and party strength on environmental policy are both conditional on the level of political stability. Respectively, greater party discipline and stronger political parties tend to raise the stringency of environmental policies when the level of political stability is high, but the reverse effect occurs when the degree of political stability is relatively low. This may help explain why Russia (GDP=$7,700 in year 2000) scores a low 26.8 on the *Institutional Capacity* index from CIESIN (2002) (higher values represent stricter policies; mean=46.58; s.d.=16.24), while Lithuania (GDP=$7,300 in year 2000) scores 50.9. Both countries have high party discipline, but Russia scores low on Kaufmann *et al.*'s (2003) political stability index (-0.4) compared to Lithuania (0.9).

Our estimates also suggest that the presence of *both* high party discipline and strong political parties has a particularly strong positive [negative] impact on environmental policy stringency, conditional on a high [low] degree of political stability. Our results hold up quite well to multiple forms of robustness tests, including instrumental variable estimation and restricting the data set in various fashions.

[14] Keefer and Khemani (2009) argue that in India parties have stronger voter attachment if they have more credible ideological positions and well maintained party machines, leading to less pork spending (in our view, credibility and party machinery are likely to increase with party age). With strong voter party attachment, party leaders are more likely to select candidates who have the interest of the party at heart, not home district pork spending.

[15] One benefit of this measure appears to be that it captures the perceived level of political stability at the national level.

Second, our empirical findings also indicate that the effect of increased political stability is conditional on party discipline and party strength, respectively (as well as the presence of both institutions). In particular, the effect of political stability on environmental policy stringency is in general positive and stronger when party discipline and/or party strength are high as opposed to low. This may help to provide an explanation why Chile (GDP=$10,100 in year 2000) scores lower than Uruguay (GDP=$9,300 in year 2000) on the *Institutional Capacity* index (CIESIN, 2002) with 57.5 versus 68.1, respectively. While both countries have relatively high political stability scores (1.04 and 0.91, respectively), Chile has low party discipline and Uruguay has high party discipline.[16]

A noteworthy finding is a distinct contrast across policies addressing primarily national (local) pollutants versus those aimed at global pollutants affecting climate change (greenhouse gases and CO_2 emissions). While greater political stability appears to *raise* the stringency of environmental policies addressing local environmental policies (as expected), political stability *reduces* the stringency of policies aimed at climate change related problems. The latter finding is our most robust empirical result. A possible explanation may be that the opportunity cost of reducing emissions of global pollutants is greater in politically stable and therefore faster-growing economies with higher levels of investment (see, e.g., Barro, 1991; Alesina and Perotti, 1996; Svensson, 1998), leading to more severe free–riding behavior. Another possibility is that for climate change policies, lower political instability and reduced uncertainty have a particularly strong effect on the incentive to bribe and otherwise influence policymakers.[17] Since the climate change problem is already a very long term issue, policymakers (in particular, those who were in office in the late 1990s and early 2000s, the years of our analysis) may not perceive changes in the time horizon as relevant for decision making during their tenure in office. Finally, the negative effect of political stability on climate change policy is smaller (and sometimes

[16] Neighboring Argentina (GDP=$12,900 in year 2000) with high party discipline and low political stability (-0.74) has an *Institutional Capacity* score of 51.6.
[17] This is similar to a case where Campante *et al*.'s (2009) *demand effect* dominates the *horizon effect*.

reversed, becoming positive) where party discipline or/and party strength is high, indicating that these political institutions are indeed relevant also for global pollutants.

We believe our findings constitute novel contributions to the literature, and that we have identified interactions that may be important in the determination also of other forms of economic policy.

The paper is structured as follows. Section II describes the empirical approach. Section III outlines the data. Section IV reports the empirical results, Section V offers a robustness analysis, and Section VI provides a conclusion. Appendix I contains summary statistics, Appendix II provides variable definitions and sources, and Appendix III includes some additional results from our robustness analysis.

II. Empirical Model

In this section we discuss the approach used to test whether countries with high party discipline or/and high party strength set tougher environmental policies when the level of political stability is high, and weaker environmental policies when the level of political stability is low. This approach is also used in the investigation into whether the effect of political stability in is conditional on the presence of high party discipline or/and high party strength.

A problem arises in the measurement of the effects of high party discipline and high party strength on each country's environmental policies. Countries are not randomly assigned high party discipline, or strong or weak political parties. Rather, each country has self-selected its levels of party discipline and party strength, respectively. These institutions resulted from, e.g., multiple historical choices made by political leaders and from existing culture.

Two estimation methods have been used to measure the treatment effect in this situation: standard dummy regression analysis (OLS) and the propensity score estimation method (PSM). The PSM advanced in Rosenbaum and Rubin (1983) is the "most developed and popular strategy for causal analysis in observation studies" (Pearl, 2009, p. 406). PSM differs from OLS by its handling of observations that do not have sufficiently similar characteristics. PSM attempts to quantify these characteristics by calculating a conditional probability (propensity score) that the country belongs to the

treatment group (e.g., "high party discipline" or "high party strength") given a set of covariates (observable characteristics), and weighs the results based on these propensity scores. PSM therefore allows us to create subgroups for the high party discipline (party strength) countries and the low party discipline (party strength) countries as if they had been randomized (Rubin, 2007).

The PSM uses a counterfactual framework pioneered by Rubin (1974) and extended by Heckman *et al*. (1997). The analysis of the treatment effect begins by using a counterfactual set-up where each country has a value for the outcome variable (environmental policy stringency in country i, t_i) when treatment occurs (t_{i1}), and when no treatment occurs (t_{i0}). t_{i1}-t_{i0} captures the Average Treatment Effect (ATE) on the outcome. We simply take the difference between the two environmental outcomes and average the difference over all countries. Because we are unable to observe the outcome for both the treated and the untreated, the basic task is to create a suitable outcome for the counterfactual on the untreated (Rosenbaum and Rubin, 1983). The simple solution is to divide the sample of countries into (i) high party discipline and low party discipline countries; and (ii) high party strength and low party strength countries; we then take the difference between the two groups.

Each country has a probability of assignment to the treatment group, given a vector of exogenous observable covariates, X. To reduce the dimensionality of the problem, Rosenbaum and Rubin (1983) suggest employing the propensity score, p(X) – the probability of receiving treatment conditional on the covariates. We then estimate the conditional probability that a country has high party discipline (high party age) based on this set of observable covariates using a probit model.[18] The estimation of the propensity score allows us to attempt to overcome the issue of self-selection.[19]

The analysis is based on the assumptions of: (1) Unconfoundness; (2) Overlap. Unconfoundness implies that the assignment of the treatment is independent of potential outcomes conditional on

[18] Caliendo and Kopenig (2008) find that the using either logit or probit yields similar results, and hence this choice is not crucial.

[19] One potential problem may arise if we were unable to fully correct for hard-to-observe cultural attributes that may influence the attitude towards the environmental protection, and are also correlated with the degree of party discipline or party strength.

observed pretreatment variables. Unconfoundness assumes that all estimators are valid only if there are no unobservable attributes correlated with both the treatment status and the policy outcome.[20] A problem can result if there are unobserved attributes that affect both the treatment assignment and the outcome of interest; the reliability of the estimators may then be questioned. Therefore, variable choice plays an important role in the model specification.[21] Overlap implies that there is sufficient overlap in the distributions of the propensity score for each group. Rosenbaum and Rubin (1983) refer to the combination of these assumptions as "strongly ignorable treatment assignment."

Heckman *et al.* (1997) and Dehejia and Wahba (1999) show that omitting variables can significantly increase the bias of the results. To address this concern, researchers use a greater dimension of X, reducing the likelihood that they have omitted key attributes. Another counterweighing issue arises regarding the possible selection of too many irrelevant variables which may come with a greater dimension of X. The applied literature is debating the correct specification of the propensity score and variable choice (see, e.g., Millimet and Tchernis, 2009). Bryson *et al*. (2002) find that too many irrelevant variables can cause an efficiency loss. However, Ichimura and Linton (2005), Zhao (2008) and Millimet and Tchernis (2009) find that including irrelevant variables does not significantly bias the propensity score measure, while excluding relevant variables may be potentially harmful.[22] To balance these concerns, Sianesi (2004) suggests including variables that either have high significance levels in the first stage, or variables used in previous studies. Thus, our analysis includes higher order terms in the propensity score specification where feasible due to sample size.

[20] We assume the environmental policy outcome is independent of the treatment, conditional on these observables (i.e. t_0, $t_1 \perp SD|X$; $\perp$ denotes independence) (Heckman *et al*., 1999).

[21] Different versions of assumption (1) are used throughout the literature: unconfoundness (Rosenbaum and Rubin, 1983); selection on observables (Heckman and Robb, 1985) or the conditional independence assumption (Lechner, 1999). We will use the term unconfoundness throughout the paper to avoid confusion.

[22] Smith and Todd (2005) suggest that both too few and too many included variables in the propensity score specification may yield biased estimates, while Rubin and Thomas (1996) favor the inclusion of variables as long as they do not raise reasonable objections.

To test for the average treatment effect (ATE), we begin by estimating the propensity score in the first stage (the predicted probability that each observation belongs to the treatment group) utilizing a probit model, and a second stage OLS regression.[23] We utilize the OLS regression to examine the impact of, e.g., high party discipline, taking political stability into account. The reason why we do not use the typical matching estimation is that we aim to explore an interaction with another variable; this interaction will have an impact on the estimation process. To allow for the interaction between variables, we utilize the following propensity score estimation method to provide consistent estimates of the ATE. Rosenbaum and Rubin (1983) show that

$$t_i = \alpha + \tau_1 Discipline_i + \tau_2 (Discipline_i * Stability_i) + \lambda Stability_i + \beta_1 \hat{p}(x_i) + \beta_2 (\hat{p}(x_i) - \overline{\hat{p}(x_i)}) + \mu_i \quad (1)$$

can provide consistent estimates, where $\hat{p}(x_i)$ represents the predicted value of the propensity score, $\overline{\hat{p}(x_i)}$ is the sample mean, and μ_i is a well-behaved error term. The analogous models are used to provide consistent estimates of the effect of high party strength, and of the presence of both high party discipline and high party strength, respectively, conditional on political stability. These regressions are also used to find the effect of political instability, conditional on the political institutions discussed.

Following Millimet and Tchernis (2009), we also expand the propensity score estimation to include higher order terms (squared and cubed terms) in the propensity score specification where feasible. The feasibility of the inclusion of higher order terms is dependent on sample size, and this forces us to stay with squared (or even linear) terms only in our robustness analysis.

III. Data

Data is available for a total of 162 countries from the late 1990's and the early 2000's. See Table A1 in Appendix I for descriptive statistics. We have eleven different dependent variables measuring

[23] We utilize a probit model in the first stage to find the propensity scores, following Rosenbaum and Rubin (1983) and Deheija and Wahba (2002).

environmental policy stringency.[24] Six of these environmental policy indices come from CIESIN (2002) and were produced in collaboration with the Yale Center for Environmental Law and Policy, the Global Leaders of Tomorrow World Economic Forum, and Columbia University's Center for International Earth Science Information Network (CIESIN): (i) *Environmental Sustainability Index* (*ESI*); (ii) *Institutional Capacity*; (iii) *Environmental Governance*; (iv) *Global Stewardship*; (v) *International Participation*; (vi) *Greenhouse Gases*.

ESI measures the current environmental performance and the capacity for policy interventions in the future. *Institutional Capacity* seeks to measure the extent to which a country has in place institutions and underlying social patterns of skills, attitudes and networks for effective responses to environmental situations. *Environmental Governance* examines the institutions, rules and practices that shape environmental policy outcomes. *Global Stewardship* reflects how a country cooperates with other countries to reduce negative transboundary environmental impacts. *International Participation* measures the extent of participation by countries in global conventions and the contribution of financial resources in international financial arrangements; this may be a somewhat blunt measure of the stringency of environmental policy addressing international pollution problems. *Greenhouse Gases* measures reductions in CO_2 emissions per unit of GDP, and CO_2 emitted per capita. An alternative measure, *CO_2 Emissions*, measures CO_2 emissions per capita only, and comes from Frankel and Rose (2005). Note that for *CO_2 Emissions* a low value represents a stricter environmental policy (contrary to the other measures). The prices of super and diesel gasoline in 2000 and 2002 come from Metschies (2003): *Super2000, Super2002, Diesel2000,* and *Diesel2002*).[25] While differences in gasoline prices across countries are affected by domestic demand and openness to international trade, environmental taxes,

[24] Our selection of multiple variables from different sources will serve to limit measurement error that may have occurred from the original sources. With a variety of outcome variables and sources, possible biases originating from the data are more limited (see Millimet, 2010).

[25] Gas tax data is available only for OECD countries, and we therefore use gas prices. Prices are available for a larger number of countries (see Fredriksson and Millimet, 2004).

congestion taxes aimed at externalities, and possible other taxes represent the overwhelming share of the variation in gasoline prices among OECD countries (OECD/IEA, 2000).

We utilize two measures classifying our 162 countries into high or low party discipline systems.[26] *Discipline1* equals 1 if a "closed list" system is used, i.e., voters cannot express preferences for candidates within a party list, i.e. the position on the list (decided by party leaders) determines a candidate's election probability; 0 otherwise (Beck *et al*., 2001). 63 out of 158 countries are classified as closed list by Beck *et al*. (2001). *Discipline2* comes from Persson and Tabellini (2003) and takes a value of 1 if all lower house legislators are elected through party lists (open or closed), and zero otherwise.[27] While voters' preferences determine the ranking on the elected list, this measure regards the existence of any party list as an indication of a measure of party discipline. As a measure of party strength we use average party age, following Enikolopov and Zhuravskaya (2007). In particular, *Strength* is defined as the average age of the two main government parties and the main opposition party, and comes from Beck *et al*. (2001). We utilize an average party age of 25 years as a cutoff value for *Strength* in the reported models.[28] However, 30 and 35 years produce highly similar results (available from the authors upon request). We created a variable, *DS*, measuring the presence of both high party discipline *and* high party strength through the interaction *Discipline1*Strength*. The distribution of countries classified according to *Discipline1* and *Strength* is given in Table 1, which suggests a reasonably even distribution.[29]

Stability is an index that combines several indicators measuring perceptions of the probability that a government in power will be destabilized or overthrown by possibly unconstitutional and/or violent

[26] Utilizing different measures limits the effects of possible measurement errors that may occur due to incorrect classification of countries (Millimet, 2010).

[27] This is a modified version of *PIND* from Persson and Tabellini (2003, p. 92).

[28] *Strength* does not simply reflect OECD membership, as the simple correlation coefficient between these variables equals 0.3415.

[29] 153 countries have both *Discipline1* and *Strength* classifications.

means, including terrorism and domestic violence. *Stability* comes from Kaufmann *et al*. (2003) and ranges from -3 to 3; higher values indicate higher political stability.

The first stage of the propensity score (results available upon request) includes variables reflecting the percentage of population adhering to Islam in 2000 (*Muslim*), years of independence (*Independence*), UK colony dummy (*UK Colony*), French colony dummy (*French Colony*), interactions between years of independence and the colony dummies (excluding the US), Africa (*Africa*), East Asia (*East Asia*), and Latin America (*Latin America*) dummies, and dummies for a parliamentary system (*Parliament*), a federal system (*Federal*), and a proportional electoral system (*Proportional*) (see Appendix II for sources). Moreover, we use several measures from World Bank (2003): age distribution (*Age 15-64*) (proxy for the number of drivers), population (*Population*), population density (*PopDensity*), and from CIA (2003) come: GDP/capita (*GDP/capita*), and the ratio of exports plus imports to GDP (*Trade Openness*).

IV. Results

Table 2 reports the main estimation results of Equation (1) using our measures of party discipline and political stability, while Table 3 displays the findings for party strength, political stability, as well as the combination variable, *DS*, created by party discipline and party strength, respectively.[30] In turn, we discuss (i) *Discipline1* and *Discipline2*; (ii) *Strength*; (iii) *DS*, and (iv) *Stability*. The models reported in Tables 2 and 3 include squared and cubed terms in the propensity score specifications (see Millimet and Tchernis, 2009).

Party Discipline

While the direct effects of *Discipline1* and *Discipline2* in Table 2 are never significant, the interactions with *Stability* are significant in 13 of the 22 specifications. All significant coefficients have the predicted sign (recall that for the outcome variable CO_2 *Emissions*, a lower value represents a more

[30] Due to concerns with collinearity and overlap of the propensity score, we dropped the squared terms of the interaction between independence and colony in the estimations using *Discipline2*.

stringent environmental policy). Out of the 13 significant coefficients the interaction with *Discipline2* is significant in only three. This may be due to fewer observations or because *Discipline2* from Persson and Tabellini (2003) appears to be a somewhat blunt measure of party discipline. It may also be due to the different average degrees of democracy for the countries classified as having high party discipline by *Discipline1* and *Discipline2*, respectively.[31] In our further robustness analysis below, we therefore focus on *Discipline1* only as a measure of party discipline. Moreover, our robustness analysis includes a study of the group of democracies separately, as the effects of party discipline and party strength may differ in this set of countries.

The results in Table 2 indicate that the effect of party discipline is conditional on the level of political stability. Party discipline tends to raise the stringency of environmental policies when stability is high, but has a negative effect on environmental policy stringency when political stability is relatively low (recall that *Stability* takes negative values). For intermediate levels of political stability, party discipline has no significant impact. As an example, Fig. 4 illustrates the effect of high party discipline (*Discipline1* = 1) on *Institutional Capacity*, conditional on the level of *Stability*. Our results suggest that institutional reforms in relatively stable countries leading to greater party discipline will result in stricter environmental policies. In politically unstable countries, on the other hand, institutional changes resulting in higher party discipline would tend to lower the stringency of environmental policies.

Party Strength and DS

Table 3 presents the initial results using *Strength*. The coefficient for *Strength* is insignificant in all models, suggesting that party strength has little direct impact on environmental policy. However, the interaction *Strength*×*Stability* is significant in seven of the eleven models reported in Table 3. Thus, increased party strength has a positive impact on environmental policy stringency when the level of political stability is high, but the reverse relationship holds when the level of political stability is low. As

[31] According to the Gastil measure from Freedom House (2006) for the years 1985-2005, the average level of democracy is 3.31 and 2.37 for high party discipline countries according to *Discipline1* and *Discipline2*, respectively, where lower values represent a higher degree of democracy.

an example, Fig. 5 illustrates the effect of high *Strength* on *Diesel2000,* conditional on the level of *Stability.*

Next, the direct effect of *DS* is significant in only one model, while the interaction *DS*×*Stability* is significant in nine models. Compared to the coefficients on the *Stability* interactions with *Discipline1*, *Discipline2* and *Strength*, respectively, reported in Tables 2 and 3, the coefficient size of the *DS*×*Stability* interactions are the largest in a majority of cases (and in seven out of the nine models with significant coefficients). It appears that stable [unstable] countries with *both* high party discipline *and* high party strength tend to set particularly strict [weak] environmental policies, relative to if only one or none such condition is present. In order to provide an illustration, Fig. 6 shows the effect of DS on *Super2000* conditional on *Stability*.

Our interpretation is that with both high discipline and high party strength, political careers are particularly tightly guided by the party leadership. Both the "stick" and the "carrot" are available to the national party bosses in this case. It follows that institutional reforms resulting in both higher party discipline and greater party strength are likely to have a particularly strong positive [negative] impact on environmental policy stringency in politically stable [unstable] countries.

Stability

Stability is significant in 37 out of 44 models in Tables 2 and 3, and the interaction with either *Discipline1*, *Discipline2*, *Strength*, or *DS*, is significant in 29 models. All significant interactions have their expected signs, and most models have the expected *Stability* coefficient sign. These models suggest that an increase is stability has a positive effect on stringency in all countries, but the effect is stronger in countries with high party discipline, party strength, or both. For example, Column (3) in Table 2 suggests that while the marginal effect of *Stability* on *Institutional Capacity* equals (6.16 + 7.04 =) 13.2 in countries with high party discipline (*Discipline1*=1), the marginal effect equals 7.04 in countries with low party discipline (*Discipline1*=0).

However, *Stability* has the reverse sign in columns (4), (6), and (7) in both Table 2 and Table 3. Common to all these models, the dependent variables measure policies addressing global transboundary pollution problems. These twelve models all suggest that in countries with low party discipline, low party strength, and where *DS*=0, increased levels of *Stability* reduces environmental policy stringency. In addition, the models in columns (6) and (7) indicate that *Stability* reduces environmental policy stringency also where party discipline or party strength is high, or where *DS*=1, although the policy impact is (generally) smaller in these cases. One possible explanation is that stable countries (with high economic growth and private investment, see, e.g., Barro, 1991; Alesina and Perotti, 1996; Svensson, 1998; see, however, Bond and Malik, 2009) may be less prone to cooperate on global pollution problems such as greenhouse gases because of higher opportunity costs. Alternatively, lower political uncertainty may increase industry lobbying and bribery activities leading to weaker policies (see Fredriksson and Svensson, 2003; Campante *et al*., 2009), but not significantly affect national party leaders' time horizon. Party bosses are likely to be more concerned about shorter-term environmental problems (and scandals) which may possibly emerge and affect the party while they are in charge.

V. Robustness Analysis

Tables 4-8 report the results of our robustness analysis. The models in Tables 4, 5, 7 and 8 use squared terms in the propensity score specification, while the models in Table 6 use linear terms only due to the restricted sample size. Since *Strength* builds on party age, it may potentially be associated with *Stability*, and we therefore use an instrumental variable approach.[32] In Table 4, we instrument *Stability* with a measure of ethnolinguistic fractionalization (*ELF*) for year 1985 from Roeder (2001). *ELF* measures the probability that two randomly selected individuals will belong to different ethno-linguistic groups. The higher is *ELF*, the more ethnically fractionalized is a county.

[32] However, we note that there are a number of countries in our data set that are classified as having strong parties, but with lower-than-average levels of stability. These include (*Stability* scores within parenthesis) Algeria (-1.54); Paraguay (-1.33), Venezuela (-1.20), and South Africa (-0.09).

Instrumenting for *Stability* causes the interaction coefficients of interest to become insignificant in several models in Table 4 (relative to Tables 2 and 3). Nevertheless, the *Stability* interactions with our variables of interest remain significant at conventional levels in 12 of the 33 models presented in Table 4. For *DS*, the interactions are significant in a majority of models (six out of eleven models). We test for the possible presence of endogeneity of the instrument using an augmented regression test, the DWH test by Davidson and MacKinnon (1993). The DWH test (not reported, available upon request) is insignificant in all models and thus endogeneity does not appear to be a concern for any of the models. Table 4 reports the results of Stock and Yogo's (2005) weak-instrument test. This test suggests that in models (7)-(11) using *Strength, ELF* is a weak instrument for *Stability*. We thus must exercise caution with these four models. However, in any case these models produce insignificant coefficients of interest. In the remaining models, the null hypothesis of a weak instrument can be rejected at conventional levels.

The *Stability* coefficient is significant in seven models in Table 4. The significant coefficients all appear for dependent variables measuring global pollutants [see Columns (4), (6), and (7)]. Moreover, twelve *Stability* interactions are significant in Table 4, all with the expected sign. The models with significant *Stability* coefficients in Table 4 suggest that increased political stability unambiguously *weakens* environmental policy stringency in countries with low party discipline and/or low party strength. Only environmental policies aimed at global pollutants are affected by political stability when party discipline and/or low party strength is low. In addition, several of the models in Columns (6) and (7) indicate a negative policy impact also in countries with high party discipline and/or high party strength.[33] However, the *Global Stewardship* models in Column (4) do suggest that greater political stability *raises* environmental policy stringency where party discipline, party strength, or *DS* are high.[34] Finally, several models using environmental policy measures for local pollution problems, such as in

[33] The negative impact is now smaller in absolute value, however.

[34] For example, Column (4) suggests that where *DS*=1, a unit increase in *Stability* leads to a (13.34-10.35) = 2.99 increase in the *Global Stewardship* index. However, the same increase in *Stability* (again where *DS*=1) leads to a (0.67-0.73) = - 0.07 change in *Greenhouse Gases*, a small decrease in policy stringency.

Columns (2), (3), and (9), imply a positive effect of *Stability* on stringency when *Discipline1*, *Strength*, or *DS* equals unity, and a zero effect otherwise.

In Tables 5 and 6, we restrict the sample based on electoral systems. In particular, we restrict the analysis to proportional and parliamentary systems, respectively. The results remain robust, particularly for the *Strength* and *DS* interactions. This occurs despite the sample size falling sharply, particularly in Table 6. The interaction coefficients of interest are significant in 17 and 13 models in each of the tables, respectively. *Stability* is significant in 17 models, and in a majority of the models utilizing *DS* (7 out of 11). In particular, *Stability* is consistently positive and significant in Columns (3) and (7), and in all but one model in Columns (1), (6), and (11).

In Table 7, we restrict the sample to countries that have been independent for at least 50 years, based on CIA (2003). This allows the main political parties the time to reach a sufficient age to be classified as strong; a country which has been independent less than 25 years is unlikely to be classified as having high party strength. The sample size falls, but 14 interaction coefficients remain significant.[35] In Table 8, the sample is restricted to countries classified as "free" or "partially free" by Freedom House (2006), i.e. democracies broadly defined. These are the countries where party candidate selection procedures and the strength of political parties are most likely to play a role. 14 interaction coefficients of interest are significant in Table 8, with the expected sign. In Tables 7-8, *Stability* is significant in the vast majority of models, and consistently so in Columns (6) and (7). These latter models all suggest that *Stability* reduces the stringency of policies aimed at reducing global warming. This is the case whether party discipline and/or party strength is high or low.[36]

[35] In additional analysis (available upon request) the sample was restricted to countries independent for at least 75 years. 17 interaction coefficients were significant (in a table similar to Table 7).

[36] Since Fredriksson and Svensson (2003) suggest that political stability is more likely to raise environmental policy stringency in less corrupt countries, we carried out an analysis which excluded from the sample the ten percent of countries classified as the most corrupt by Kaufmann *et al*. (2003). With the drop in the number of observations came a decline in the number of significant interaction coefficients and *Stability* coefficients in the models using *Strength*, but not in the models using *Discipline1* or *DS*. A comparison of the models using *DS* in Table 3 suggest that in five out of the seven models with *DS* where both relevant *Stability* coefficients are significant, the aggregate positive effect of *Stability* is greater when the most corrupt countries are dropped. However, overall the effect of *Stability* did not become noticeably more positive.

Overall, our robustness analysis suggests that it is especially the presence of *both* high party discipline *and* strong political parties that has a positive (negative) effect on environmental policy in stable (unstable) countries. In the robustness analysis in Tables 4-8, the interaction *DS×Stability* is significant in between five to eight models, with the expected sign. Thus, this interaction is generally significant in a majority of models. The results are consistent, but weaker, for *Discipline1* and *Strength* separately. Nevertheless, we find that political institutions which affect the career decisions of politicians matter for environmental policy outcomes.

We also find that an increase in political stability has a robust effect on the policies and pollutants affecting global warming, measured by *Greenhouse Gases* and CO_2 *Emissions*. In Tables 2-8, with a total of 19 models, the *Stability* coefficient is significant in Columns (6) and (7) in all but one model for each dependent variable. The effect of higher political stability is to *reduce* environmental quality. The impact occurs in all systems, but it is particularly strong in countries with low party discipline and/or low party strength. Free-riding behavior at the global level appears related to a combination of political stability and the types of political institutions discussed in this paper.

VI. Conclusion

In this paper, we provide cross-country evidence from propensity score estimations that suggest that greater party discipline and/or party strength induce legislators to set stricter environmental policies when the degree of political stability is high, but weaker environmental policies when the level of political stability is low. The strongest and most robust effects result from the presence of *both* high party discipline and high party strength. Moreover, we also find that political stability has a robust positive effect on local (national) environmental policies, but only when party discipline and/or party strength are high. Political stability has a *negativ*e impact on policies aimed at reducing climate change emissions. The latter effect is more acute in systems with low party discipline and/or weak parties.

These empirical results suggest that in relatively stable countries, institutional reforms that raise party discipline and party strength will increase environmental policy stringency and thus improve

environmental quality. The opposite result may be expected to occur in countries where political instability is endemic. Finally, higher political stability appears detrimental to efforts to combat global warming. It appears that our results may have implications also for our understanding of other forms of economic policymaking. Further research in this area appears productive.

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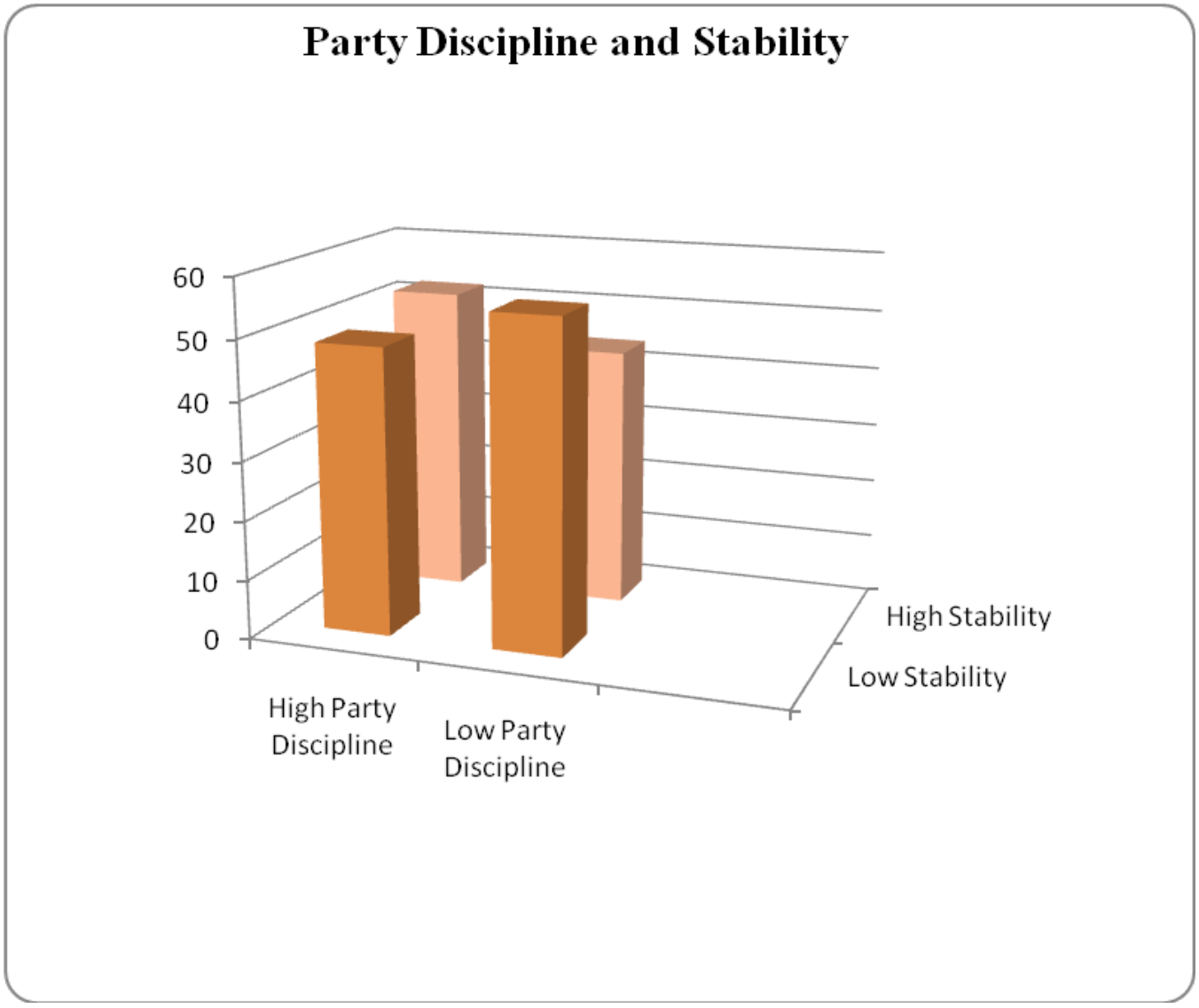
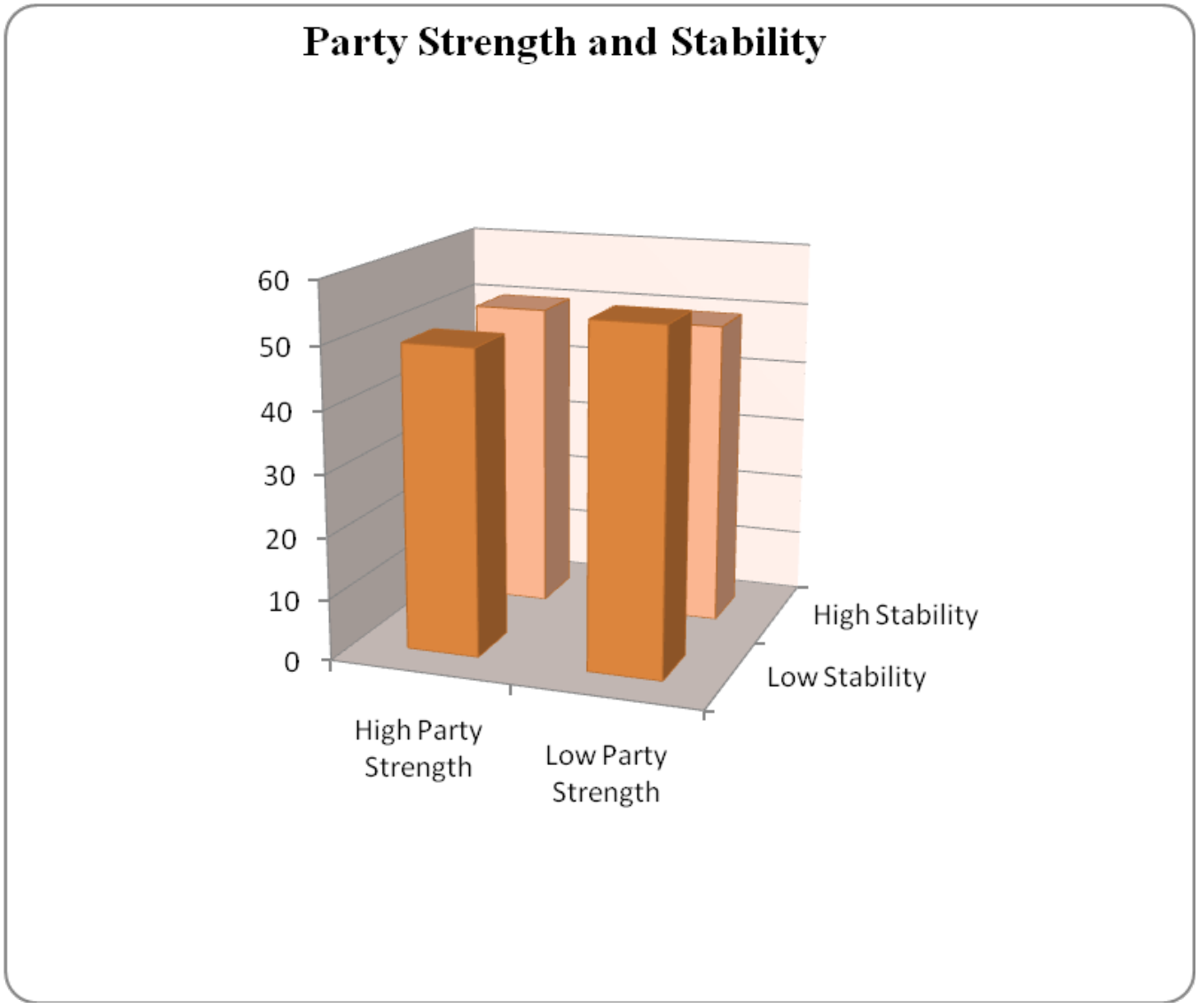
Figure 1. Global Stewardship index values for combinations of High and Low Party Discipline, and Political Stability



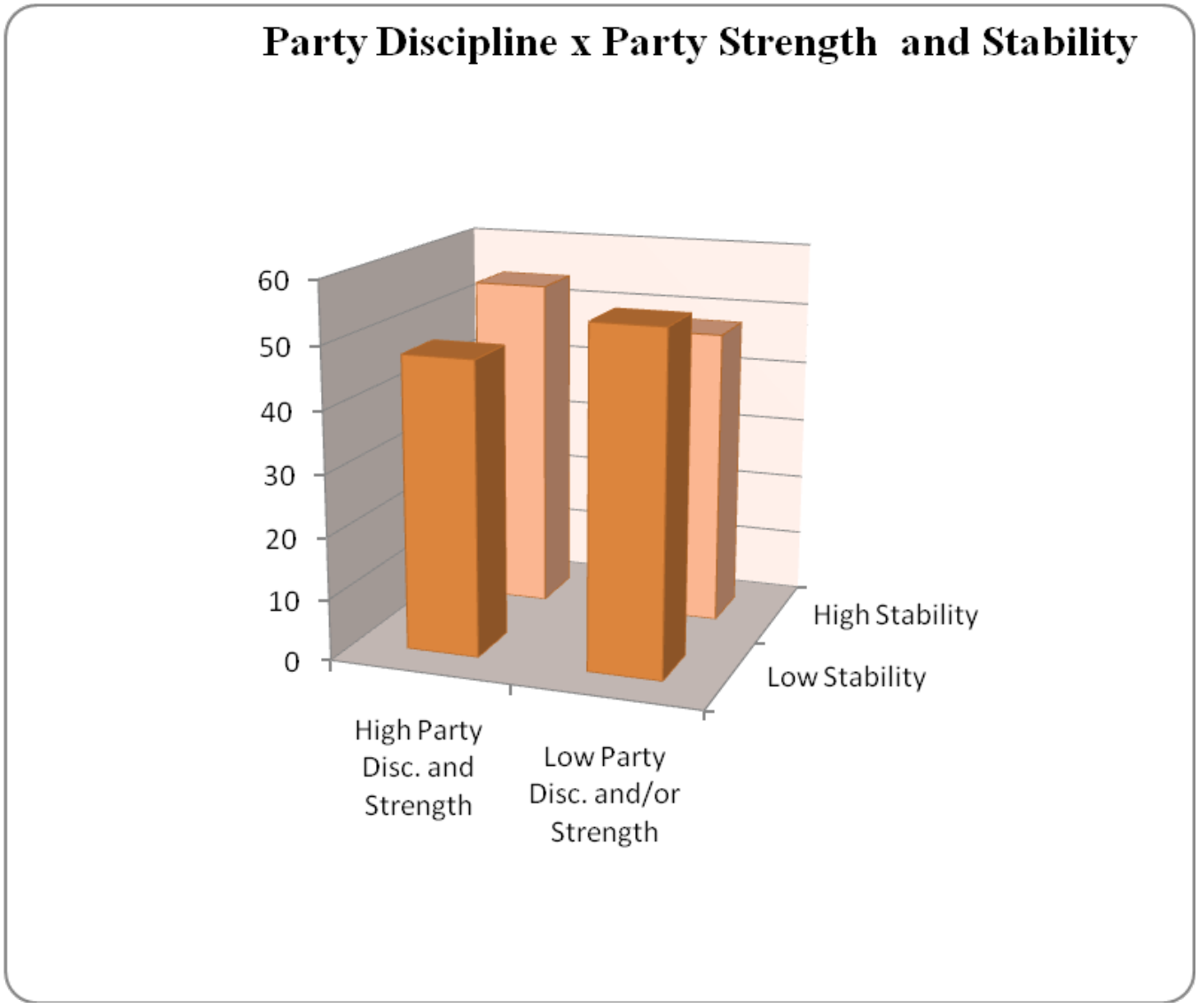
Global Stewardship Index	High Party Discipline	Low Party Discipline
Low Stability	48.47	55.35
High Stability	52.06	43.80

Figure 2. Global Stewardship index values for combinations of High and Low Party Strength and Political Stability

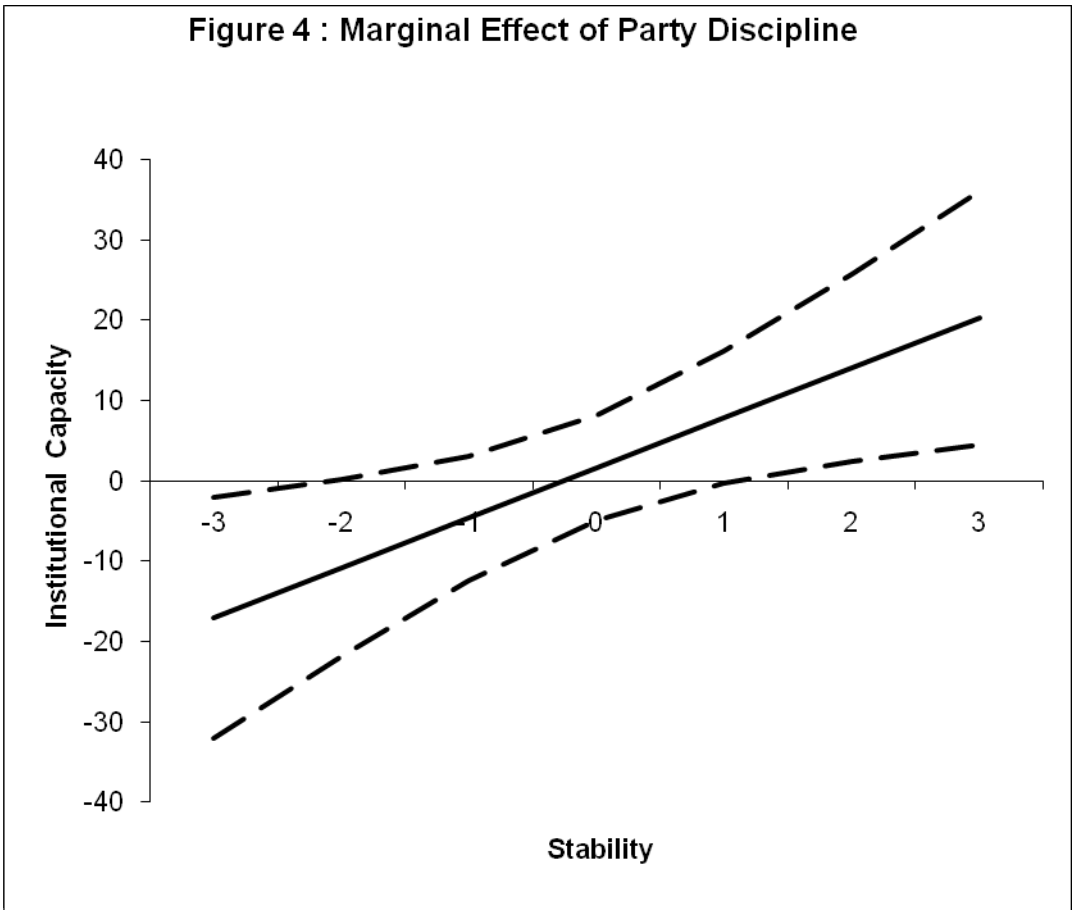


Global Stewardship Index	High Party Strength	Low Party Strength
Low Stability	49.39	54.89
High Stability	50.04	49.24

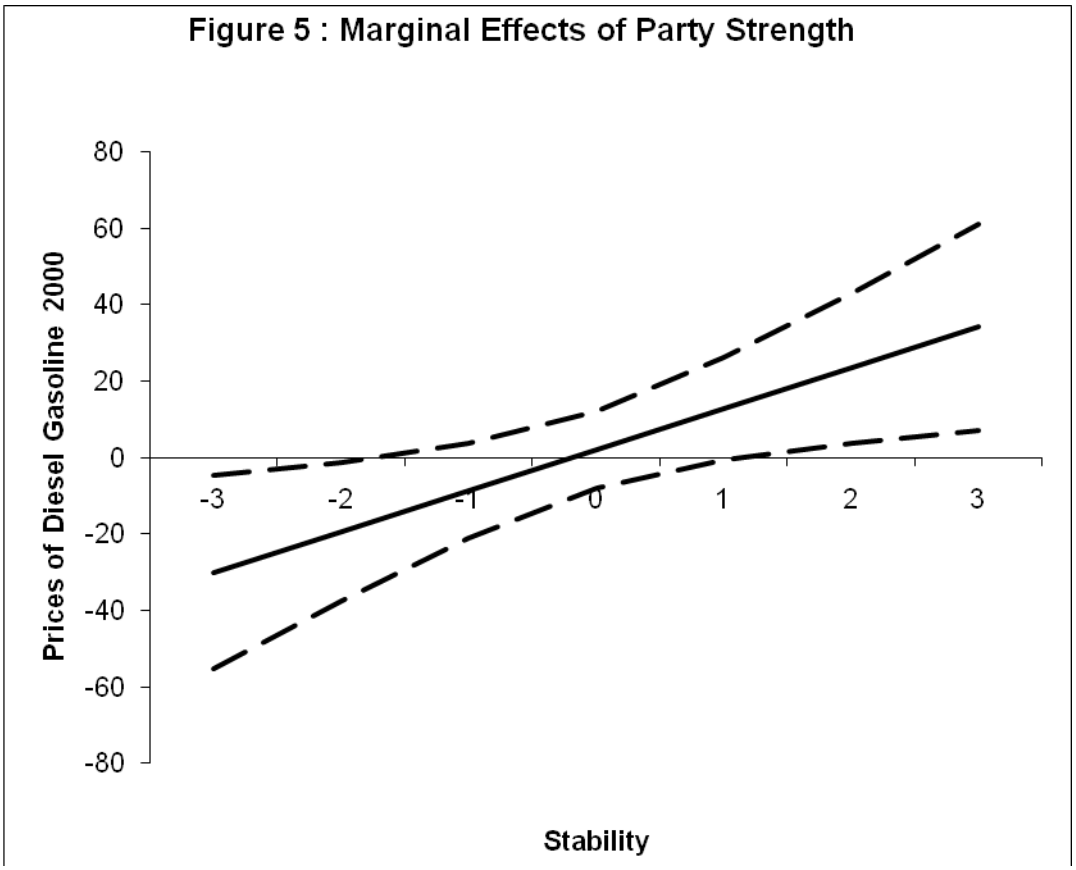
Figure 3. Global Stewardship index values for combinations of Party Discipline interacted with Party Strength, and Political Stability



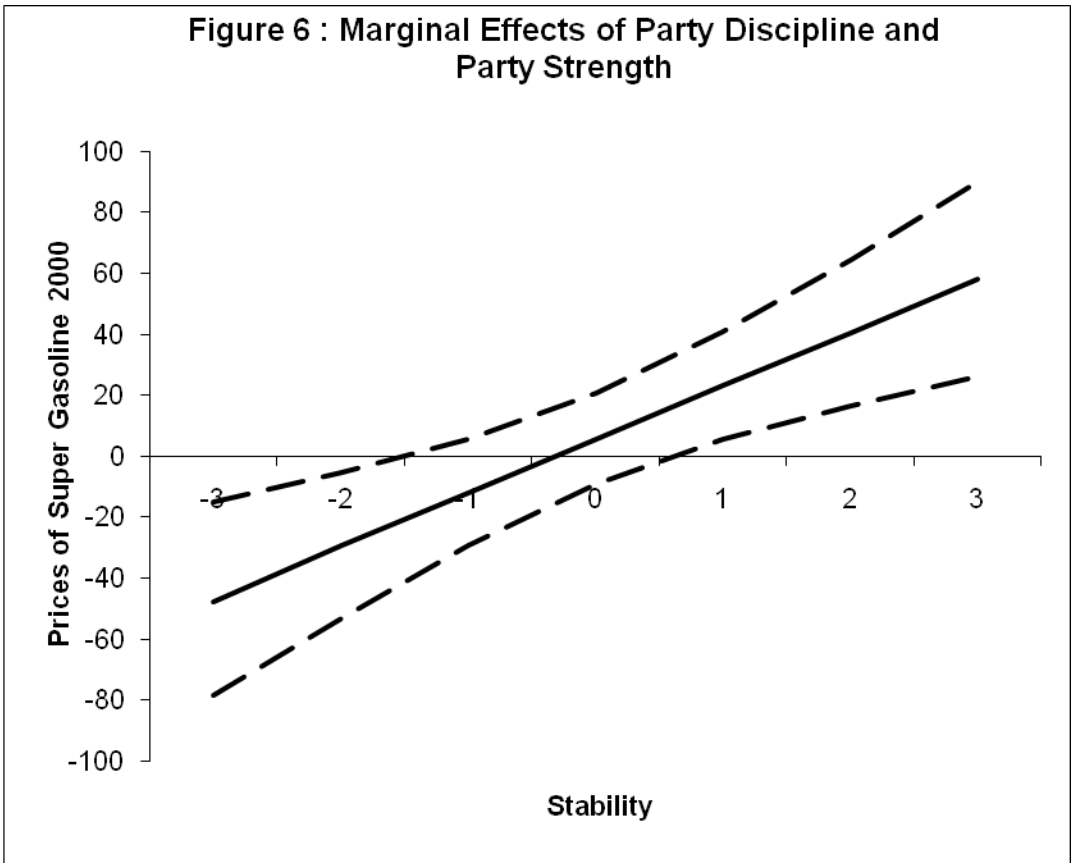
Global Stewardship Index	High Party Strength and Party Discipline	Low Party Strength and/or Low Party Discipline
Low Stability	47.61	54.52
High Stability	53.98	47.86



Notes: The marginal effect of *Discipline1* on *Institutional Capacity* conditional on *Stability*. The dotted lines are the 95% confidence interval. The range of the actual values is -2.42 to 1.63, but the possible range has been plotted.



Notes: The marginal effect of *Strength* on *Diesel2000* conditional on *Stability*. The dotted lines are the 95% confidence interval. The range of the actual values is -2.42 to 1.63, but the possible range has been plotted.



Notes: The marginal effect of *Strength*Discipline1* on *Super2000* conditional on *Stability*. The dotted lines are the 95% confidence interval. The range of the actual values is -2.42 to 1.63, but the possible range has been plotted.

Appendix I

Table A1. Summary Statistics

	Obs	Mean	S.D	Minimum	Maximum
Treatment Variables					
Discpline1	162	0.39	0.49	0	1
Discpline2	85	0.34	0.48	0	1
Strength	153	0.42	0.50	0	1
DS	153	0.19	0.39	0	1
Stability	162	-0.02	1.01	-2.42	1.63
Outcome Variables					
ESI	141	49.49	9.09	23.9	73.9
Institutional Capacity	141	46.58	16.24	20.9	91.5
Environmental Governance	141	-0.08	0.62	-1.31	1.47
Global Stewardship	141	50.50	14.01	9.3	74.2
International Participation	141	-0.02	0.60	-1.31	1.4
Greenhouse Gases	141	-0.01	0.87	-3.05	0.97
CO_2	162	4.67	6.51	0.001	42.47
Super 2000	150	59.91	25.27	2	119
Super 2002	158	59.23	26.39	2	123
Diesel 2000	150	45.01	22.71	2	122
Diesel 2002	158	45.5	23.09	1	120
Independent Variables					
Proportional	162	0.54	0.50	0	1
Parliament	162	0.33	0.47	0	1
Federal	162	0.14	0.34	0	1
GDP/capita	162	7575.80	8217.56	510	36400
Trade Openness	162	37.21	37.11	3.17	241.98
Population (millions)	162	33.64	125.96	.01	1273
Age 15-64	162	60.97	6.70	47.34	73.87
Age 65+	162	7.00	4.80	1.91	18.34
PopDensity	162	49.33	418.63	0.22	5297.93
Independence	162	0.36	0.34	0.01	1
Muslim	162	30.87	37.70	0	100
Africa	162	0.28	0.45	0	1
East Asia	162	0.14	0.35	0	1
Latin America	162	0.15	0.36	0	1
UK Colony	162	0.20	0.35	0	0.94
French Colony	162	0.41	0.43	0	0.98
ELF	162	0.45	0.27	0	0.98
Democracy Dummy	162	0.58	0.50	0	1

Appendix II

Data Description

Discpline1. A dummy variable equal to 1 if he voters cannot express preference for candidates within a party list. Source: Beck *et al*. (2001).

Discpline2. A dummy variable equal to 1 if all lower-house legislators are elected through party lists (open or closed), and zero otherwise. Source: Persson and Tabellini (2003).

Strength. A dummy variable equal to 1 if the average age of the first government party, second government part, and first opposition party or the subset of these for which the age of the party is known is greater than 25 years. Source: Beck *et al*. (2001).

Stability. A point estimate that measures the likelihood that the government in power will be destabilized or overthrown. Source: Kaufmann *et al*. (2003)

ESI. The current environmental performance and capacity for future policy interventions. Source: CIESIN (2002).

Institutional Capacity. The extent to which a country has in place institutions and underlying social patterns of skills, attitudes and networks that foster effective responses to environmental situations. Source: CIESIN (2002).

Environmental Governance. A measure that examines the institutions, rules and practices that shape environmental policy. Source: CIESIN (2002).

Global Stewardship. How a country cooperates with other countries to reduce negative transboundary environmental impacts. Source: CIESIN (2002).

International Participation measures the extent of participation by countries in global conventions and participation in international financial funds. Source: CIESIN (2002).

Greenhouse Gases measures CO_2 emissions per unit of GDP and CO_2 emitted per capita with higher values represents lower emissions. Source: CIESIN (2002).

CO_2 Emissions measures the average CO_2 emissions per capita from 1990-1995. Source: Frankel and Rose (2005). http://faculty.haas.berkeley.edu/arose.

Super2000. The price of super gasoline in 2000 in US cents per liter. Source: Metschies (2003).

Super2002. The price of super gasoline in 2002 in US cents per liter. Source: Metschies (2003).

Diesel2000. The price of diesel gasoline in 2000 in US cents per liter. Source: Metschies (2003).

Diesel2002. The price of diesel gasoline in 2002 in US cents per liter. Source: Metschies (2003).

Proportional. A dummy variable equal to 1 if the winning party needs to gain a majority of the districts to gain power and *Democratic* equals 1. Source: Persson and Tabellini (2002).

Parliament. A dummy variable equal to 1 if the country has a parliamentary form of government. Source: Persson and Tabellini (2002).

Federal. A dummy variable equal to 1 if the country has a federal political structure**.** Forum of Federations (2005)

PopDensity. Population divided by land area, 2000. Source: World Bank (2003).

Population. Measures the total population for the country, 1999. Source : World Bank (2003)

Age15-64. Percentage of the total population between 15 and 64 years old, 1999. Source: World Bank (2003).

Age65+. Percentage of the total population over the age of 65, 1999. Source: World Bank (2003).

GDP/CAP. Per capita gross domestic product in US dollars. Source: CIA Factbook (2003).

Trade Openness. Trade in good as a percent of GDP. Total Export and Total Imports divided by GDP, 2000. Source: CIA Factbook (2003).

Muslim. Percent of population following the religion of Islam, 2000. Source: www.factbook.net/muslim_pop.php.

Independence. (250 - number of years independent from 1748)/250. Source: CIA Factbook (2003)

UK Colony. Interaction between a dummy for a country being a UK colony (excluding the US) and (250 – the number of years of independence from 1748)/250. Source: Persson and Tabellini (2002) and CIA Factbook (2003).

French Colony. Interaction between a dummy for a country being a UK colony (excluding the US) and (250 – the number of years independent from 1748)/250. Sources: Persson and Tabellini (2002) and CIA Factbook (2003).

Africa. A dummy equal to 1 if the country is located on the continent of Africa.

East Asia. A dummy equal to 1 if the country is located in East Asia.

Latin America. A dummy equal to 1 if the country is located in Latin America or South America.

Ethnolinguistic Fractionalization. The probability that two randomly selected individuals will belong to different ethno-linguistic group. Source: Roeder (2001).

Democracy. A dummy equal to 1 if a country is classified as “Free” or “Partly Free” in 2000. Source: Freedom House (2006).

Table 1. Country Distributions

	Strength	
Discipline1	**Low**	**High**
Low	53	36
High	35	29

Table 2. Empirical Results I

Treatment Variable	Outcome Variable										
	ESI	Environmental Governance	Institutional Capacity	Global Stewardship	International Participation	Greenhouse Gases	CO_2 Emissions	Super 2000	Super 2002	Diesel 2000	Diesel 2002
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Discipline1											
Discipline1	0.73	0.13	1.13	2.94	0.17	0.07	-1.08	5.55	7.78	2.40	3.07
	(1.89)	(0.13)	(3.12)	(3.29)	(0.13)	(0.07)	(1.25)	(5.35)	(5.20)	(4.45)	(4.60)
Discipline1×	1.55	**0.24*** **	**6.16*** **	**8.67*** **	**0.21*** **	**0.40*** **	**-1.84***	**9.18** **	**10.35** **	**9.00** **	**10.14*** **
Stability	(1.43)	**(0.10)**	**(2.36)**	**(2.49)**	**(0.10)**	**(0.15)**	**(0.99)**	**(4.25)**	**(4.03)**	**(3.78)**	**(3.57)**
Stability	**2.34*** **	**0.22*** **	**7.04*** **	**-5.16*** **	**0.21*** **	**-0.45*** **	**3.62*** **	2.99	**5.16** **	**3.70***	**4.34** **
	(0.85)	**(0.06)**	**(1.40)**	**(1.47)**	**(0.06)**	**(0.09)**	**(0.55)**	(2.46)	**(2.33)**	**(2.22)**	**(2.06)**
Obs.	140	140	140	140	140	140	162	150	158	150	158
Discipline2											
Discipline2	7.59	0.14	12.38	8.37	0.27	0.04	-1.36	2.49	11.47	0.72	12.10
	(4.92)	(0.35)	(8.84)	(8.11)	(0.28)	(0.50)	(2.05)	(10.73)	(10.38)	(9.84)	(9.02)
Discipline2×	-0.32	0.18	3.31	**11.92*** **	0.02	**0.44***	-0.69	8.75	**12.16***	6.45	8.65
Stability	(2.31)	(0.17)	(3.96)	**(3.80)**	(0.13)	**(0.23)**	(1.26)	(6.46)	**(6.22)**	(5.92)	(5.42)
Stability	**4.04** **	**0.27** **	**10.27*** **	**-8.30*** **	**0.33*** **	**-0.55*** **	**3.18*** **	1.03	5.02	5.38	**8.38***
	(1.87)	**(0.13)**	**(3.36)**	**(3.08)**	**(0.11)**	**(0.19)**	**(1.02)**	(5.29)	(5.11)	(4.85)	**(4.44)**
Obs.	74	74	74	74	74	74	81	76	78	76	78

Notes: All propensity score estimates include linear, squared and cubed terms. ***,**,* represent significance at the 1%, 5%, 10% level respectively. Standard errors are given in parenthesis.

Table 3. Empirical Results II

Treatment Variable	Outcome Variable										
	ESI	Environmental Governance	Institutional Capacity	Global Stewardship	International Participation	Greenhouse Gases	CO_2 Emissions	Super 2000	Super 2002	Diesel 2000	Diesel 2002
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Strength											
Strength	1.06	0.17	5.26	1.59	0.19	-0.05	0.67	2.79	-2.46	1.79	-0.94
	(2.18)	(0.14)	(3.40)	(3.65)	(0.14)	(0.22)	(0.97)	(5.88)	(5.84)	(5.26)	(5.00)
Strength× *Stability*	-0.06	**0.30*** **	**6.42*** **	**5.12** **	0.13	0.21	0.32	**14.14*** **	**8.76** **	**11.34*** **	**9.12** **
	(1.47)	**(0.10)**	**(2.30)**	**(2.47)**	(0.09)	(0.15)	(0.72)	**(4.44)**	**(4.32)**	**(3.98)**	**(3.70)**
Stability	**4.09*** **	**0.12***	**5.23*** **	**-3.29***	**0.17*** **	**-0.30*** **	**1.67*** **	0.21	**6.03** **	1.77	**4.99** **
	(1.00)	**(0.07)**	**(1.56)**	**(1.67)**	**(0.06)**	**(0.10)**	**(0.48)**	(3.20)	**(2.96)**	(2.87)	**(2.53)**
Obs.	126	126	126	126	126	126	142	131	139	131	139
DS											
DS	1.05	0.22	**7.62***	-0.70	0.04	-0.10	-0.11	3.50	-6.20	1.63	-8.05
	(2.85)	(0.19)	**(4.57)**	(4.89)	(0.19)	(0.30)	(1.35)	(8.10)	(7.44)	(7.54)	(6.59)
DS× *Stability*	0.60	**0.34*** **	**7.51*** **	**6.31** **	**0.22** **	**0.28***	-0.82	**17.15*** **	**15.58*** **	**12.85*** **	**12.87*** **
	(1.60)	**(0.11)**	**(2.56)**	**(2.75)**	**(0.11)**	**(0.17)**	(0.83)	**(4.61)**	**(4.62)**	**(4.29)**	**(4.09)**
Stability	**3.74*** **	**0.21*** **	**7.18*** **	**-3.18** **	**0.20*** **	**-0.34*** **	**2.55*** **	3.22	**6.58*** **	**4.62** **	**6.14*** **
	(0.79)	**(0.05)**	**(1.26)**	**(1.35)**	**(0.05)**	**(0.08)**	**(0.38)**	(2.31)	**(2.20)**	**(2.14)**	**(1.95)**
Obs.	126	126	126	126	126	126	142	131	139	131	139

Notes: See Table 2.

Table 4. Robustness Analysis I: Instrumental Variable Estimates

Treatment Variable	Outcome Variable										
	ESI	Environ-mental Governance	Institutional Capacity	Global Stewardship	International Participation	Greenhouse Gases	CO_2 Emissions	Super 2000	Super 2002	Diesel 2000	Diesel 2002
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Discipline1											
Discipline1	0.38	0.15	1.78	3.96	0.14	0.07	-0.73	6.16	6.55	4.10	2.85
	(2.03)	(0.14)	(3.24)	(3.71)	(0.13)	(0.22)	(1.31)	(5.60)	(5.50)	(4.91)	(4.68)
Discipline1× *Stability*	4.65	**0.37***	7.50	**16.31*****	**0.37***	**0.78****	-1.16	2.43	9.97	10.01	11.90
	(2.96)	**(0.20)**	(4.71)	**(5.39)**	**(0.19)**	**(0.32)**	(1.93)	(8.92)	(8.61)	(7.82)	(7.60)
Stability	-0.72	0.09	5.83	**-12.84*****	0.05	**-0.83*****	**3.03***	10.22	5.47	3.22	2.69
	(2.71)	(0.18)	(4.32)	**(4.95)**	(0.18)	**(0.29)**	**(1.75)**	(8.21)	(7.98)	(7.20)	(7.04)
F-statistic	15.22[b]	15.22[b]	15.22[b]	15.22[b]	15.22[b]	15.22[b]	16.53[a]	15.14[b]	14.18[b]	15.14[b]	14.18[b]
Obs.	139	139	139	139	139	139	160	147	155	147	155
Strength											
Strength	1.60	0.16	5.34	1.73	0.21	-0.05	0.56	-0.23	-6.33	1.35	-2.20
	(2.14)	(0.15)	(3.36)	(4.00)	(0.15)	(0.23)	(1.00)	(6.77)	(5.87)	(5.26)	(4.96)
Strength× *Stability*	2.69	**0.59***	11.32	**15.40***	0.53	0.76	-2.23	-9.00	-0.83	3.08	3.57
	(4.81)	**(0.33)**	(7.52)	**(8.95)**	(0.34)	(0.52)	(2.85)	(19.40)	(17.44)	(15.07)	(14.74)
Stability	1.31	-0.17	0.40	-13.64	-0.22	**-0.85***	4.03	22.92	14.37	9.56	9.79
	(4.68)	(0.32)	(7.32)	(8.72)	(0.33)	**(0.51)**	(2.79)	(19.04)	(17.12)	(14.80)	(14.67)
F-statistic	5.96[d]	5.96[d]	5.96[d]	5.96[d]	5.96[d]	5.96[d]	4.70	4.96	4.15	4.96	4.15
Obs.	126	126	126	126	126	126	141	130	138	130	138
DS											
DS	0.59	0.22	**7.28***	-0.86	0.14	-0.10	-0.13	5.67	1.45	3.03	-4.05
	(2.61)	(0.18)	**(4.08)**	(4.73)	(0.18)	(0.28)	(1.30)	(7.77)	(6.80)	(6.82)	(6.01)
DS× *Stability*	4.02	**0.55*****	**11.71****	**13.34****	**0.48****	**0.67***	-1.81	8.71	**15.75***	11.80	13.57
	(3.27)	**(0.22)**	**(5.11)**	**(5.93)**	**(0.22)**	**(0.36)**	(1.64)	(9.26)	**(9.67)**	(8.12)	(8.55)
Stability	-0.03	0.01	2.77	**-10.35****	-0.06	**-0.73****	**3.50****	11.88	7.05	5.87	5.54
	(2.91)	(0.20)	(4.55)	**(5.28)**	(0.20)	**(0.32)**	**(1.45)**	(8.24)	(8.77)	(7.23)	(7.75)
F-statistic	10.37[b]	10.37[b]	10.37[b]	10.37[b]	10.37[b]	10.37[b]	10.71[b]	11.87[b]	9.09[b]	11.87[b]	9.09[b]
Obs.	126	126	126	126	126	126	141	130	138	130	138

Notes: *****,**,*** represents significance in the estimates at the 1%,5%, 10% level, respectively. For all models and treatment variables, the DWH test indicates that we cannot reject the null of exogenous variables (available upon request). To test the null hypothesis of ethnolinguistic fractionalization being a weak instrument, we use the critical values from Stock and Yogo's (2005) weak-instrument test based on TSLS size with exact identification. The critical values are 16.38, 8.96, 6.66, and 5.53, for the 10-percent, 15-percent, 20-percent, and 25-percent sizes, respectively. [a], [b], [c], and [d] implies that the weak instruments hypothesis is rejected with the most, second, third, and forth, level of stringency criterion, respectively. No letter implies that the null hypothesis is not rejected.

Table 5. Robustness Analysis II: Proportional Electoral Systems

Treatment Variable	Outcome Variable										
	ESI	Environ-mental Governance	Institutional Capacity	Global Stewardship	Internation'l Participat'n	Greenhouse Gases	CO_2 Emissions	Super 2000	Super 2002	Diesel 2000	Diesel 2002
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Discipline1											
Discipline1	-0.46	0.08	-1.20	-0.08	0.16	-0.11	-0.20	-2.30	4.60	-3.51	-0.02
	(2.58)	(0.15)	(4.23)	(4.02)	(0.16)	(0.25)	(1.17)	(5.80)	(5.73)	(5.33)	(4.83)
Discpline1× *Stability*	1.43	0.19	**5.97***	4.74	0.21	0.18	-0.62	8.39	5.60	**9.56****	5.70
	(2.06)	(0.12)	**(3.38)**	(3.21)	(0.13)	(0.20)	(1.02)	(5.36)	(5.07)	**(4.71)**	(4.28)
Stability	**2.53***	**0.26*****	**7.58*****	-1.81	**0.19****	**-0.29****	**2.62*****	4.49	**9.22****	5.00	**8.69*****
	(1.52)	**(0.09)**	**(2.49)**	(2.37)	**(0.09)**	**(0.15)**	**(0.75)**	(3.96)	**(3.79)**	(3.48)	**(3.20)**
Obs.	75	75	75	75	75	75	84	83	86	83	86
Strength											
Strength	-0.65	0.18	7.18	-1.94	0.20	-0.12	0.26	-1.61	-6.64	-0.69	-2.59
	(4.14)	(0.23)	(6.14)	(6.55)	(0.24)	(0.39)	(1.47)	(8.65)	(8.37)	(7.83)	(7.06)
Strength× *Stability*	0.27	**0.26****	**6.26***	3.56	**0.23***	0.14	0.47	**21.41*****	**14.72*****	**14.87*****	**13.01*****
	(2.22)	**(0.12)**	**(3.28)**	(3.50)	**(0.13)**	(0.21)	(1.00)	**(5.49)**	**(5.04)**	**(4.98)**	**(4.26)**
Stability	2.71	0.15	**5.33****	-1.80	0.08	-0.26	**1.61****	-5.60	3.77	0.79	4.92
	(1.72)	(0.10)	**(2.55)**	(2.72)	(0.10)	(0.17)	**(0.76)**	(4.29)	(3.80)	(3.89)	(3.20)
Obs.	72	72	72	72	72	72	81	79	82	79	82
DS											
DS	4.46	0.13	7.59	4.80	0.31	-0.04	-0.68	-8.12	-14.68	-10.80	**-13.47***
	(4.88)	(0.26)	(6.99)	(7.38)	(0.27)	(0.46)	(1.80)	(9.12)	(9.19)	(8.24)	**(7.87)**
DS× *Stability*	2.21	**0.30*****	**7.60****	**5.50***	**0.32*****	0.24	-0.63	**20.43*****	**17.04*****	**15.44*****	**11.95*****
	(2.19)	**(0.12)**	**(3.14)**	**(3.31)**	**(0.12)**	(0.21)	(1.00)	**(5.33)**	**(5.13)**	**(4.83)**	**(4.39)**
Stability	**2.18***	**0.18****	**6.26*****	-1.90	0.09	**-0.29****	**2.44*****	-0.35	**5.92***	3.75	**7.60*****
	(1.40)	**(0.08)**	**(2.00)**	(2.12)	(0.08)	**(0.13)**	**(0.60)**	(3.37)	**(3.08)**	(3.04)	**(2.64)**
Obs.	72	72	72	72	72	72	81	79	82	79	82

Notes: *****,**,*** represents significance in the estimates at the 1%,5%, 10% level, respectively. The models use only linear terms for the propensity score specification. The sample includes only countries with a proportional voting system.

Table 6. Robustness Analysis III: Parliamentary Systems

Treatment Variable	**Outcome Variable**										
	ESI	Environ-mental Governance	Institutional Capacity	Global Stewardship	International Participation	Greenhouse Gases	CO_2 Emissions	Super 2000	Super 2002	Diesel 2000	Diesel 2002
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Discipline1											
Discipline1	-1.26	-0.32	-7.96	-6.12	0.32	-0.51	-0.29	-3.50	-7.79	-11.26	-7.75
	(4.65)	(0.29)	(7.51)	(7.05)	(0.28)	(0.47)	(2.21)	(9.45)	(9.87)	(9.33)	(8.86)
Discpline1× *Stability*	1.27	**0.34***	**8.42***	**8.41***	0.17	0.42	-1.11	10.36	6.43	11.55	3.90
	(2.92)	**(0.18)**	**(4.72)**	**(4.43)**	(0.17)	(0.30)	(1.54)	(6.60)	(6.89)	(7.17)	(6.18)
Stability	**5.62*****	0.20	**8.98*****	**-5.40***	0.19	**-0.50****	**4.13*****	**9.08***	**9.83****	7.06	**12.02*****
	(2.02)	(0.13)	**(3.27)**	**(3.08)**	(0.12)	**(0.21)**	**(1.01)**	**(4.74)**	**(4.76)**	(4.77)	**(4.28)**
Obs.	46	46	46	46	46	46	54	46	53	46	53
Strength											
Strength	-5.47	0.06	2.19	-7.38	0.22	-0.08	-1.29	-1.80	-7.32	6.74	3.52
	(5.19)	(0.30)	(7.84)	(7.98)	(0.34)	(0.53)	(2.16)	(9.28)	(10.18)	(11.02)	(9.97)
Strength× *Stability*	2.40	0.22	**8.16***	**9.99****	0.02	0.26	0.98	**20.99*****	**21.65*****	6.25	7.26
	(2.96)	(0.17)	**(4.47)**	**(4.55)**	(0.19)	(0.30)	(1.63)	**(6.99)**	**(7.66)**	(8.29)	(7.51)
Stability	**5.70*****	0.16	**7.12****	-2.74	**0.27****	**-0.37***	**2.48****	4.12	5.11	**11.75****	**12.92*****
	(1.89)	(0.11)	**(2.86)**	(2.91)	**(0.12)**	**(0.19)**	**(1.12)**	(4.68)	(5.13)	**(5.55)**	**(5.03)**
Obs.	46	46	46	46	46	46	54	53	53	53	53
DS											
DS	4.11	0.29	5.55	-6.70	0.10	-0.30	0.26	**-15.78***	-21.38**	-16.35	**-19.94****
	(5.49)	(0.26)	(7.09)	(8.73)	(0.32)	(0.57)	(2.46)	**(9.22)**	(10.08)	(10.27)	**(9.65)**
DS× *Stability*	1.59	0.22	**8.56****	**8.71***	0.20	0.30	-1.12	**25.04*****	**28.93*****	**16.38****	**16.71****
	(3.18)	(0.15)	**(4.11)**	**(5.06)**	(0.19)	(0.33)	(1.65)	**(6.56)**	**(7.17)**	**(7.30)**	**(6.86)**
Stability	**5.36*****	**0.19****	**7.68*****	-2.02	**0.22****	**-0.39****	**3.93*****	**6.46***	**5.49**	**8.10****	**9.61****
	(1.62)	**(0.08)**	**(2.09)**	(2.58)	**(0.09)**	**(0.17)**	**(0.90)**	**(3.60)**	**(3.94)**	**(4.01)**	**(3.77)**
Obs.	46	46	46	46	46	46	54	53	53	53	53

Notes : *****,**,*** represents significance in the estimates at the 1%,5%, 10% level, respectively. The sample includes only countries with a parliamentary style of government.

Table 7. Robustness Analysis IV: Independence 50+ Years

Treatment Variable	Outcome Variable										
	ESI	Environ-mental Governance	Institutional Capacity	Global Stewardship	International Participation	Greenhouse Gases	CO_2 Emissions	Super 2000	Super 2002	Diesel 2000	Diesel 2002
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Discipline1											
Discipline1	0.75	-0.02	-1.11	-3.79	-0.11	0.08	-0.87	-0.04	6.37	-3.26	-0.96
	(3.89)	(0.25)	(6.42)	(6.07)	(0.21)	(0.32)	(1.70)	(10.06)	(9.23)	(8.45)	(8.02)
Discipline× *Stability*	-0.51	0.07	3.50	**6.97****	0.14	**0.28***	-1.29	5.76	8.21	1.07	3.59
	(2.00)	(0.13)	(3.30)	**(3.12)**	(0.11)	**(0.16)**	(0.98)	(5.59)	(5.44)	(4.70)	(4.73)
Stability	**4.00*****	**0.40*****	**10.58*****	**-4.02***	**0.33*****	**-0.43*****	**3.21*****	**9.45****	**10.02*****	**14.99*****	**13.21*****
	(1.33)	**(0.08)**	**(2.20)**	**(2.08)**	**(0.07)**	**(0.11)**	**(0.62)**	**(3.73)**	**(3.53)**	**(3.13)**	**(3.07)**
Obs.	74	74	74	74	74	74	78	74	77	74	77
Strength											
Strength	1.96	**0.30***	6.21	-3.73	0.25	**-0.41***	2.12	-1.05	-7.19	0.02	-3.96
	(3.14)	**(0.18)**	(4.59)	(4.62)	(0.15)	**(0.23)**	(1.49)	(9.89)	(8.97)	(7.94)	(7.51)
Strength× *Stability*	0.30	**0.30****	**7.17****	**6.98****	0.09	0.25	0.35	**13.19***	**10.94***	**9.26***	**9.07***
	(2.31)	**(0.13)**	**(3.38)**	**(3.40)**	(0.11)	(0.17)	(1.02)	**(6.99)**	**(6.44)**	**(5.62)**	**(5.39)**
Stability	**4.29*****	**0.22****	**6.89****	-4.14	**0.34*****	**-0.34*****	**1.73****	4.23	8.07	**9.17****	**9.45****
	(1.82)	**(0.11)**	**(2.66)**	(2.67)	**(0.09)**	**(0.13)**	**(0.78)**	(5.69)	(5.08)	**(4.57)**	**(4.25)**
Obs.	68	68	68	68	68	68	71	67	70	67	70
DS											
DS	1.43	0.15	4.55	0.12	0.20	-0.06	-0.22	7.87	4.35	1.86	-3.75
	(3.17)	(0.20)	(4.82)	(4.66)	(0.16)	(0.24)	(1.59)	(6.37)	(8.83)	(5.30)	(7.58)
DS× *Stability*	0.07	0.12	3.29	**7.53****	0.03	**0.42****	**-1.84***	**10.64***	**11.61***	4.74	5.31
	(2.21)	(0.14)	(3.36)	**(3.25)**	(0.11)	**(0.17)**	**(1.10)**	**(6.03)**	**(6.20)**	(5.02)	(5.32)
Stability	**4.12****	**0.38*****	**10.61*****	**-3.99****	**0.41*****	**-0.47*****	**3.45*****	**7.99****	**9.62****	**13.83*****	**12.70*****
	(1.38)	**(0.09)**	**(2.10)**	**(2.02)**	**(0.07)**	**(0.11)**	**(0.65)**	**(3.70)**	**(3.81)**	**(3.08)**	**(3.27)**
Obs.	68	68	68	68	68	68	71	67	70	67	70

Notes: *****,**,*** represents significance in the estimates at the 1%,5%, 10% level, respectively. The models use only linear terms for the propensity score specification. The sample includes only countries that have been independent for 50 or more years.

Table 8. Robustness Analysis VI: Democracies

Treatment Variable	Outcome Variable										
	ESI	Environ-mental Governance	Institutional Capacity	Global Stewardship	International Participation	Greenhouse Gases	CO_2 Emissions	Super 2000	Super 2002	Diesel 2000	Diesel 2002
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Discipline1											
Discipline1	0.37	0.23	3.01	0.71	0.08	-0.09	0.30	**10.43***	**11.19***	5.77	5.44
	(2.14)	(0.15)	(3.72)	(3.83)	(0.14)	(0.24)	(1.38)	**(6.26)**	**(6.29)**	(5.97)	(5.69)
Discpline1×	1.23	0.11	3.89	**6.23****	0.10	**0.32***	-1.36	6.61	7.10	**8.21***	**7.92***
Stability	(1.64)	(0.12)	(2.85)	**(2.93)**	(0.11)	**(0.18)**	(1.04)	(4.97)	(4.82)	**(4.74)**	**(4.28)**
Stability	**3.15*****	**0.31*****	**8.55*****	-3.06	**0.30*****	**-0.39*****	**3.16*****	**6.20***	**8.57*****	4.30	**5.92****
	(1.11)	**(0.08)**	**(1.93)**	(1.98)	**(0.07)**	**(0.12)**	**(0.67)**	**(3.26)**	**(3.17)**	(3.11)	**(2.87)**
Obs.	106	106	106	106	106	106	120	113	119	113	119
Strength											
Strength	1.93	0.12	4.17	3.41	0.11	0.11	0.01	2.35	-8.32	0.50	-2.81
	(2.54)	(0.17)	(4.10)	(4.15)	(0.15)	(0.27)	(1.10)	(7.08)	(6.82)	(6.66)	(6.00)
Strength×	0.42	**0.26****	4.48	**5.24***	0.18	0.14	-0.05	**9.61***	5.98	8.85	**9.01***
Stability	(1.90)	**(0.13)**	(3.08)	**(3.12)**	(0.11)	(0.20)	(0.90)	**(5.78)**	(5.59)	(5.45)	**(4.92)**
Stability	**4.03*****	**0.15***	**6.50*****	-2.02	**0.18****	**-0.24***	**1.62*****	4.35	**8.74****	3.39	**5.74***
	(1.26)	**(0.08)**	**(2.04)**	(2.06)	**(0.07)**	**(0.13)**	**(0.57)**	(3.87)	**(3.53)**	(3.64)	**(3.11)**
Obs.	95	95	95	95	95	95	104	97	103	97	103
DS											
DS	1.54	0.24	6.05	2.58	0.01	0.14	-0.35	11.62	6.87	9.48	3.33
	(2.98)	(0.21)	(4.97)	(5.04)	(0.19)	(0.33)	(1.45)	(9.04)	(8.19)	(8.76)	(7.33)
DS×	0.79	**0.24***	5.11	**6.46****	0.16	0.26	-0.61	**12.39****	**10.39***	**10.60***	**9.00***
Stability	(1.89)	**(0.13)**	(3.16)	**(3.20)**	(0.12)	(0.21)	(0.95)	**(5.74)**	**(5.80)**	**(5.56)**	**(5.19)**
Stability	**3.85*****	**0.25*****	**8.52*****	-2.29	**0.25*****	**-0.31*****	**2.33*****	**6.67****	**10.25*****	**5.90***	**8.30*****
	(1.04)	**(0.07)**	**(1.74)**	(1.76)	**(0.07)**	**(0.11)**	**(0.50)**	**(3.13)**	**(3.39)**	**(3.03)**	**(2.76)**
Obs.	95	95	95	95	95	95	104	97	103	97	103

Notes: *****,**,*** represents significance in the estimates at the 1%,5%, 10% level, respectively. The sample includes only countries classified as Free or Partially Free in year 2000 by Freedom House (2006).