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## Veto Players, intertemporal interactions and policy adaptability: How do political institutions work?

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# **VETO PLAYERS, INTERTEMPORAL INTERACTIONS AND POLICY ADAPTABILITY: HOW DO POLITICAL INSTITUTIONS WORK?**

BY

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## **Abstract\***

Veto player theory argues that a higher number of veto players lowers the likelihood of change; in turn, policies that do not change help to sustain commitments but may prevent adaptation to changing circumstances. This paper challenges that claim of veto player theory by arguing that policy stability does not necessarily mean lower policy adaptability. If policymaking takes place over time with actors interacting repeatedly, more cooperative polities might be able to achieve both objectives at once, and a higher number of veto players might even favor intertemporal cooperation. The paper presents a simple formalization of the argument and some supportive cross-national empirical evidence.

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# 1. Introduction

“Institutions may be seen as architecture and as rules that determine opportunities and incentives for behavior, inclusion and exclusion of potential players, and structuring the relative ease or difficulty of inducing change, and the mechanisms through which change may be facilitated or denied.”

Rhodes, Binder and Rockman (2006, p. xiii).  
Introduction to the *Oxford Handbook of Political Institutions*

Why can some countries maintain the basic thrust of their policies for long periods of time, thus creating a predictable and stable environment, while others experience frequent changes in policies, often with each change in administration? Why can some countries rapidly adapt their policies to changes in external circumstances or innovate when policies are failing, while other countries react slowly or with great difficulty, retaining inappropriate policies for long periods of time? Why can some countries effectively implement and enforce the policies enacted by the legislature, while others take a great deal of time to do so or are ineffective? Why are some countries able to more or less achieve the desired objectives of legislated policies, while others provoke responses in economic and social actors that lead outcomes in directions different than those originally intended?

In trying to answer these questions researchers are inevitably drawn to consider the effects of political institutions on policymaking and policy. As the epigraph above highlights, political institutions determine inclusion and exclusion of players and structure the relative ease or difficulty of policy change. The best known line of work in modern political science relating the rules of inclusion and exclusion of political actors to the relative difficulty of policy change is the veto player theory of George Tsebelis (1995, 2002) and others. The veto player theory of Tsebelis has the great virtue of going beyond traditional dyadic criteria in order to characterize political systems in their entirety. He employs a systemic perspective by examining which *configurations* of political institutions impact the way policy is made in different countries. One of the main implications of that theory is that having more veto players necessarily makes a polity less able to change its policies. That could be both a virtue (from the perspective of policy credibility), and a problem (due to the inability to solve problems when they arise, or to innovate when policies fail).

We argue in this paper that having more veto players *does not necessarily* make a polity less able to adjust its policies. We build a framework that stresses the fact that policymaking takes place over time and that agents may take into account the impact of their actions today on

the actions of other agents in the future. Viewing policymaking through the lenses of repeated game theory, and treating political institutions as parameters that characterize the rules of those games, we come to some conclusions that question the generality of results obtained with more static approaches. If the actors involved in policymaking are able to strike and sustain the necessary transactions as they interact over time, it is possible that polities characterized by a large number of veto players may be able to adjust policies when necessary and avoid changing them for spurious reasons.

## 2. Veto Player Theory

Veto player approaches have achieved great prominence in the field of comparative politics.<sup>1</sup> In a work that has been characterized as a *tour de force* of modern political science theory,<sup>2</sup> George Tsebelis (1995, 1999, 2000, and 2002) elaborated a very useful approach to the study of comparative politics and policymaking. A review article states:

“Veto point and veto player approaches have come to occupy a central place in comparative politics, especially in the fields of comparative public policy and political economy. Virtually every policy area has been studied within at least one of the various approaches, and the relevant literature grows at a fast pace. The most elaborate and prominent approach, George Tsebelis’ veto player theory, moves well beyond the explanation of particular policy outputs on economic outcomes and tries to provide a unified theoretical perspective on political institutions in a wide variety of political systems. Tsebelis’ theory systematically relates veto players to the potential for policy change in a political system.” (Ganghoff, 2003: 1).

Tsebelis’ work on veto players is motivated by the fact that comparisons across countries are difficult given the multidimensionality of the set of institutions. Most of the previous literature on political institutions tended to use a single criterion to identify the main characteristics of a polity (presidential/parliamentary, majoritarian/proportional, two-party/multiparty, etc.). The relations and interactions among all those dimensions were underdeveloped. To understand the policymaking process of a given country, it is not enough to

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<sup>1</sup> Veto player logic has been applied to the study of welfare states (Jochem 2003, Obinger 2002), inequality (Birchfield and Crepaz, 1998) government spending (Bawn, 1999b), fiscal adjustment (Pamp, 2007), tax competition (Basinger and Hallerberg, 2004), monetary policy (Keefer and Stasavage, 2003), monetary institutions (Hallerberg, 2002), international trade arrangements (Mansfield, Milner, and Pevehouse, 2007), the business environment (Henisz, 2000), European Union decision-making, and various other important issues. Various analyses have found evidence consistent with veto player predictions, but also several studies find contradicting evidence. See for instance McGann (2004), Gelbach and Malesky (2008), Hellman (1998), and Immergut et al. (2007).

<sup>2</sup> Franzese (2005).

simply aggregate the generic effects induced by each of its institutional features. It is necessary to use some sort of **systemic** approach that permits comparing political systems which vary simultaneously along many dimensions.<sup>3</sup> Tsebelis proposes the “configuration of veto players” as the optic to summarize the characteristics of political systems, especially when seen from the perspective of their policy consequences.

A veto player is an actor whose consent is necessary to change policy. These actors could be individual or collective. Any given collection of veto players can be characterized by its number, the distribution of preferences (“ideological distance”), and the internal cohesion of collective veto players. Tsebelis places these configurations in a spatial representation and utilizes social choice concepts such as the size of the *unanimity winset* (set of policies that defeat the status quo by unanimity) to derive predictions about the likelihood of policy change. Other things constant, more veto players imply a smaller winset and, hence, a lower likelihood of policy changes. Policy *stability* is the main dependent variable in Tsebelis’ analysis, while configurations of veto players are the intermediate theoretical concept explaining policy stability. Tsebelis (2002, part II) suggests rules for relating actual political institutions (democratic and nondemocratic regimes, presidentialism and parliamentarism, unicameralism and bicameralism, two-party and multiparty systems, and strong and weak parties) to configurations of veto players. A subsequent literature has attempted to refine this mapping (Stoiber, 2006; Ganghoff 2003; Birchfield and Crepaz, 1998; Kaiser, 1997), and, as we state below, extend it to presidential regimes. This has led to the development of a number of cross-national measures of veto player configurations, which we utilize in the empirical section.

Even though Tsebelis’ initial work has been applied mainly to parliamentary democracies, the framework has wider scope. There have been a number of applications to presidential regimes. An important volume edited by Haggard and McCubbins (2001)<sup>4</sup> provides some valuable extensions and applications of the veto player logic to that setting, and it introduces an alternative specification of the dependent variable (characteristics of policies). The authors unbundle the dependent variable into the ability to change policy (*decisiveness*) and the

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<sup>3</sup> See Gerring, Thacker and Moreno (2005) for another attempt at providing a systemic perspective on the effects of political institutions.

<sup>4</sup>The book *Presidents, Parliaments, and Policy* has theoretical contributions by the editors in combination with Gary Cox and Matthew Shugart and empirical contributions applied to a number of presidential democracies by various other distinguished scholars. For brevity we will often refer to this work as “Cox and McCubbins,” referring to Chapter 2, the main theoretical chapter in the volume.

ability to commit to a given policy once it is enacted (*resoluteness*).<sup>5</sup> The ability to change and to commit to policies depend on the number of veto points determined by political institutions (*separation of power*) and the diversity of party interests controlling those veto points (*separation of purpose*). Based on how different institutions (electoral rules, the number of chambers, legislative procedures, etc.) bear on separation of power and purpose, an effective number of veto players can be calculated for any configuration of political institutions.<sup>6</sup> Along a decisiveness- resoluteness continuum, countries with more veto players will be located closer to the resoluteness end.

We can summarize some of the main predictions from these veto player approaches in two propositions, which we state as hypotheses to be evaluated in the empirical section.

PROPOSITION 1 (Veto Player Theory): *A more decisive polity must necessarily be less resolute* (Haggard and McCubbins, p. 6).

PROPOSITION 2 (Veto Player Theory): *As the effective number of vetoes increases, the polity becomes more resolute and less decisive* (Haggard and McCubbins, p. 27). Or equivalently: *Many veto players make significant policy changes difficult or impossible* (Tsebelis, 2002, p. xv).

### 3. An Intertemporal Framework

#### 3.1. From Vetoing to Cooperating

Imagine a country that has suffered an important economic shock that, from a utilitarian welfare point of view, calls for some adjustment. According to veto player theory, a polity with more veto players would have a harder time adjusting to such shocks. Let us try to find a way out of that logic.

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<sup>5</sup> As we explain below, we will have as our dependent variables two concepts that are equivalent to the notions of decisiveness and resoluteness, which are policy *adaptability* and policy *stability*. The first pair refers to properties of the polities, while the second refers to properties of the policies. It is indistinct to focus on one or the other pair. We used the words adaptability and stability in our empirical work (see section 4) because they were more understandable for a network of policy experts we consulted when developing a survey for some previous empirical work within Latin America.

<sup>6</sup> Such mapping is provided in *Presidents, Parliaments, and Policy* in Chapter 3 by Shugart and Haggard (2001) and in introductory Chapter 1 by Haggard and McCubbins (2001b). Pérez-Liñán and Rodríguez-Raga (2003) develop a computational model to expand the theory of veto players into the real of presidential regimes.



Why would a (veto) player oppose such “welfare-enhancing” change? Obviously because, (even) at the new state of the world, that player would lose if policy moves from the status quo to the new adjusted policy. How can that reluctant player be brought on board?

Ideally, that player should be compensated so that he is also made better off. If such instant compensation were available, that would be the end of the problem. Of course, in real life such simple schemes are complicated by a variety of factors. The player in question might (in the case of imperfect information about payoffs) strategize in order to obtain a higher than necessary compensation. Or he might face uncertainty about the effects of the new policy on his future welfare. Or the policy space may have indivisibilities that make it unfeasible to compensate everyone. Likewise, compensations might only be implemented via policies in different domains, which might have different temporal properties. Sometimes a cost suffered in the present can only be compensated by a *flow* of policy benefits that need to be deployed and politically ratified later in time. Such a scenario, as is well known in transaction cost economics and in its suggested application to politics (North, 1990; Dixit, 1996), presents problems of credibility and time (in)consistency. The losing player might hear all kinds of promises about future benefits, but it is not obvious that delivering those benefits will be the preferred course of action of whoever is in charge of such decisions in the future.

In order for such intertemporal promises to work well, it is necessary to have some mechanism for enforcing them. In economic transactions these promises can be built into contracts that are, to some extent, enforced by third parties such as a court of law. In practice these exchanges are far from perfect even in the private domain. This can result from difficulties in incorporating every possible contingency into the contract and from several imperfections in the workings of enforcers themselves (such as courts). It is well known by now (North, 1990; Dixit, 1996; Spiller, Stein and Tommasi, 2003) that such third party enforcement is even more problematic in the political domain, since often there is no third party to enforce “political contracts.”<sup>7</sup>

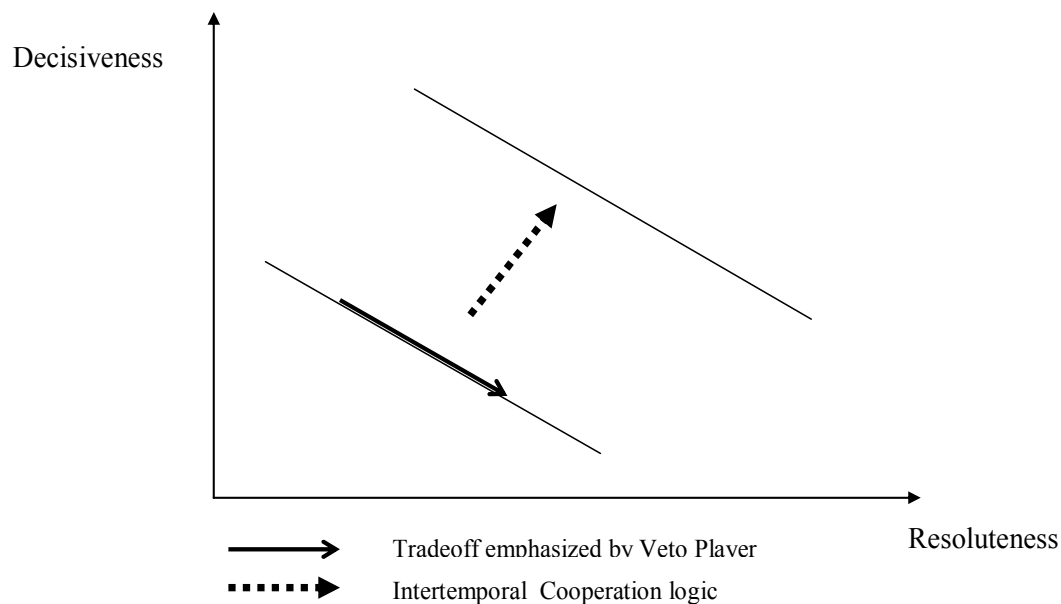
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<sup>7</sup> A partial exception to that rule might be legislation that is written into constitutions, or laws, which can be enforced (and protected from infringement by actors such as Parliament or the President) by an independent Supreme Court or equivalent organ. This is a point to which we return below, since it is one specific instance where the veto player logic and our intertemporal approach differ. Judicial independence is seen as a veto player in the former, and as an enabler of intertemporal cooperation in the latter. See Sousa (2006) for an analysis on the multiple roles of the judiciary in the policymaking process, along the lines we emphasize here.

That leaves open the possibility of self-enforcement. Since the seminal paper *A Theory of Self-Enforcing Agreements* by Lester Telser (1980) a huge literature has been spawned, including notable recent applications to politics, such as Przeworski's (2005) *Democracy as an Equilibrium* and Fearon's (2006) *Self-Enforcing Democracy*. All of them cast the question of self-enforcement within the framework of repeated game theory. Similarly, we apply the logic of self-enforcement to *policy* agreements to show that intertemporal cooperation can lead to results contradicting Propositions 1 and 2 above.

The argument can be anticipated in an intuitive manner with the help of Figure 1. If we imagine a decisiveness-resoluteness space, Proposition 1 of the veto player approach tells us that different polities should be located along a downward-sloping line, and Proposition 2 tells us that increasing the number of veto players should move us down that line. We argue that such would be the case when there is no intertemporal cooperation. If cooperation is possible, better outcomes in *both* policy characteristics can be achieved. In Figure 1 this corresponds to an outward shift of the decisiveness-resoluteness frontier. Furthermore, we argue that under some conditions, having more veto players might facilitate intertemporal cooperation, thus promoting both resoluteness *and* decisiveness.

**Figure 1. Tradeoff between Decisiveness and Resoluteness**



### ***3.2 Relation to the Literature***

This paper is part of a research agenda focusing on the intertemporal nature of politics and policymaking, and hence it models such interactions as repeated games. Modeling political interactions as repeated games is not a new idea, but we believe that such logic has not been carried out fully in the comparative study of the effects of political institutions.

Important applications of repeated game logic to policymaking have been used in various domains, such as international relations (Powell, 1991; Barrett, 1999), macroeconomic policy in two-party systems (Alesina, 1987), fiscal and monetary policymaking in the EMU (Dixit, 2001), and behavior within the U.S. legislature (Fox, 2006; Carrubba and Volden, 2000; Calvert and Fox, 2003). But to our knowledge, there is almost no formal work of that sort explicitly addressing comparative politics questions. The literature in comparative politics offers various insightful discussions of problems of intertemporal cooperation, with some prominent examples in the study of party system institutionalization and Executive-Legislative relations (for instance ,Shugart and Carey, 1992; Mainwaring and Scully, 1995; Mainwaring and Shugart, 1997; and Mainwaring and Torcal, 2005). We believe these insights could (and perhaps should) be explored more formally.

The ingredients of our framework are not new. The contribution of this article (and a related agenda) comes from combining these ingredients in a novel way that helps advance our understanding of the impact of institutions on certain desirable features of policies. The formal framework has been presented before in Spiller, Stein and Tommasi (2003), and Spiller and Tommasi (2003) and (2007, Chapter 2). It builds upon previous contributions such as Alesina (1988), Dixit, Grossman and Gul (2000), Dixit (2003), and de Figueiredo (2002). The conceptualization of policymaking as intertemporal exchanges draws from a long tradition in transaction cost economics, which has been applied to the political arena by North (1990), Dixit (1996), and Levy and Spiller (1996).<sup>8</sup> Jacobs (2004) presents a logic of intertemporal policy choices close in spirit to ours, and applies it to study the politics of pension reform in Britain and the United States in Jacobs (2008). After finishing this paper we became aware of a complementary paper by Gelbach and Malesky (2008) that argues that (welfare-improving) reform is not necessarily more difficult when there are more institutional veto players, and presents evidence in that regard. The logic there, although sharing some of the spirit of this

paper, is not based on intertemporal cooperation, but on the interaction between these institutional veto players (who are assumed to be likely to prefer efficient policies), with interest groups that could lobby or bribe to obtain inefficient policies.

The focus on the intertemporal nature of political transactions allows us to bridge the way in which two important issues have been studied lately: the *origins* of institutions and their *effects*. The fact that institutions allocate power over time has been an essential component in many explanations of institutional *origin*. Various authors argue that institutions are chosen/imposed in order to achieve efficiency or distributive objectives *over time*—for instance, Williamson (1991) and Baker, Gibbons and Murphy (2002) on alternative modes of economic organization, North and Weingast (1989) on Parliament, Weingast and Marshall (1988) on institutions within the U.S. Congress, Acemoglu and Robinson (2006) on the democratic franchise, Fearon (2006) on electoral democracy, Przeworski (2005) on democratic pacts, Boix (1999) on electoral systems, and Buchanan and Tullock (1962) on constitutions.<sup>9</sup>

On the other hand, research on the *effects* of institutions (including the veto player literature) has given less emphasis to the intertemporal dimensions of policy exchange and has looked mainly at interactions that take place at one point in time. See for instance the excellent textbook treatments in Mueller (2003) and Persson and Tabellini (2000). Part IV of the Persson and Tabellini text is devoted to “dynamic politics,” but most of the dynamics are captured through *economic* state variables. These chapters do not focus on the comparative analysis of the effects of political institutions, a topic covered in Part III in the context of static models. Even though the models often specify a sequential extensive form, they do not contemplate exchanges in the spirit of “I am willing to give you this today in exchange for that tomorrow.”<sup>10</sup> The contrast between the dynamic analysis of institutional origin and the static analysis of institutional effects is evident in Weingast’s (2002) survey article on Rational Choice Institutionalism.

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<sup>8</sup> See also Huber and Shipan (2002) and Epstein and O’Halloran (1999).

<sup>9</sup> For a complementary line of work seeing institutions as *equilibria* of repeated games, see Calvert (1995a, 1995b), Aoki (2001) and Greif (2006), and references therein. (Bawn, 1999a, models ideology as equilibria in a repeated game). As it will be seen below, the spirit of our framework is quite close to that line of work.

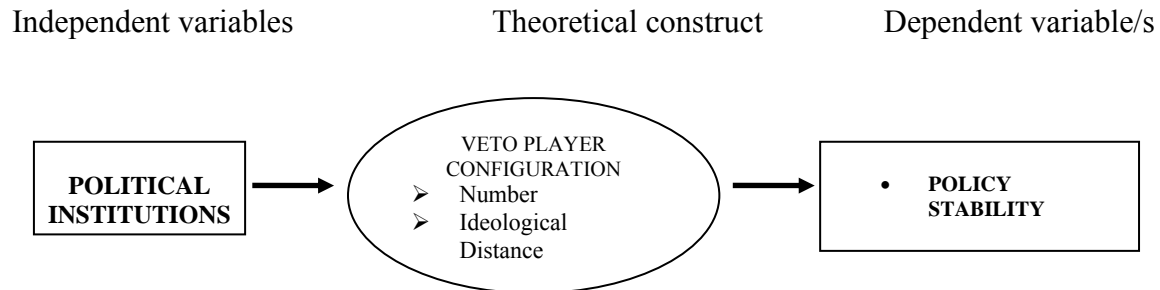
<sup>10</sup> There are the exceptions mentioned above in the treatment of behavior within legislatures, mainly in American politics.

### 3.3 Policymaking over Time in Changing Environments

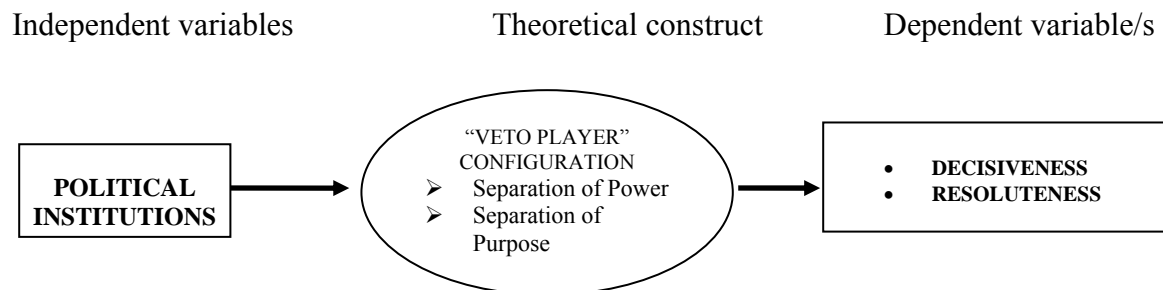
Figure 2 below introduces a schematic comparison between veto player approaches (panels A and B) and the intertemporal approach we propose (panel C), highlighting some commonalities in their logical structure. In all cases the logic goes from real world political institutions to a summary representation of the entire political system, which is in turn associated with the resulting policy characteristics through a particular theoretical lens. In the intertemporal framework, configurations of political institutions are mapped into sets of parameters of a repeated game. Different sets of parameters are then mapped into different likelihoods of cooperation. Cooperation, in turn, has an impact on policy characteristics.

**Figure 2. Comparison of Policymaking Frameworks**

#### A. Tsebelis (1995 and 2002) Veto Player Framework

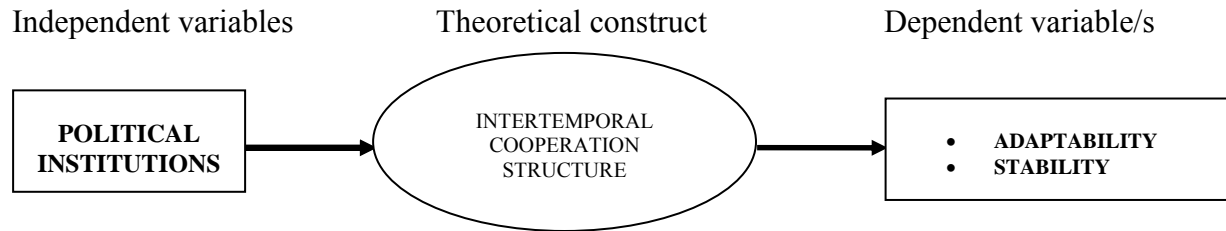


#### B. Framework of Cox and McCubbins in Haggard and McCubbins (2001)



**Figure 2., continued**

### **C. Intertemporal Cooperation Framework**



#### *The Policymaking Game*

We view policymaking as a game among political actors that has policies as its outcome. This game is played according to rules (political institutions); it takes place in an environment in which underlying socioeconomic/technological conditions (“the state of the world”) change and in which the political power of different actors also varies over time. The purpose of the analysis is to identify conditions under which political actors can cooperate over time and generate policies with desirable properties.

#### *The Players and Their Power*

We pay special attention to the fact that the actual political power of different actors varies over time.<sup>11</sup> We argue that the intertemporal allocation of political power, and not just the picture of who are the (veto) players today, potentially matters for policymaking. As an example, imagine a country with a very stable political party system in which there are five parties, three of which constitute the government at any point in time.<sup>12</sup> Depending on the intertemporal allocation of political power we might encounter very different policymaking styles. If one party will almost never be in power, its interests are unlikely to be ever taken into consideration. If, on the other hand, each party has an equal probability of being part of the government at any given point, patterns of intertemporal cooperation might lead to taking into consideration the welfare of those

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<sup>11</sup> The fact that political power changes over time is likely to generate forms of policy gaming other than the ones we focus on, as those considered in Moe (1990a and 1990b), de Figueiredo (2002), Besley and Coate (1998), Persson and Svensson (1989), and Tabellini and Alesina (1990).

<sup>12</sup> For simplicity in the exposition and in the analysis we will take (as veto player theory does) the allocation of who is in power at each point in time as exogenous.

who do not presently have a seat at the table. Thus, the exclusive focus on “veto players” (in this case, three) might lose significance.

### *The State of the World*

We also pay special attention to the fact that governments must operate in an ever-changing world. Random events frequently call for policy adaptation. New circumstances in international markets, policy decisions in other countries, technological changes, diseases, natural disasters, and social and demographic changes are events that present new demands on public policies. There are also many cases in which, even if the underlying state of the world has not changed much, it becomes fairly evident that past policies are not working properly in achieving the desired objectives. Similarly, news about successful practices in other countries might call for revision of current policies.

### *Dependent Variables*

Following the previous point, we will say that, in the context of our framework, a policy is *adaptable* if it responds adequately to the state of the world. Our notion of adaptability (analogous to *decisiveness*) embeds several desirable traits of policy or policymaking which have been referred to by previous work, such as: the ability to adapt to exogenous shocks (Tsebelis, 1999: 591); the flexibility to resolve problems faster (Tsebelis, 2002: 7); the capacity to solve problems when they arise (Tsebelis, 2002: 6-7); the ability to innovate when policies fail (Weaver and Rockman, 1993); and the adaptation of social programs to contemporary socio-economic risks (Natali and Rhodes, 2007).

We define our other dependent variable, policy *stability*, as policies that do not change for reasons other than responding adequately to new states of the world. Our notion of stability, very similar to *resoluteness* in Cox and McCubbins, embeds several desirable traits of policy and policymaking which have been referred to in the previous literature. Stability refers to notions such as: the ability to ensure policy stability so that policies have time to work (Weaver and Rockman, 1993: 6); the ability to make and maintain international commitments in the realms of trade and national defense (Weaver and Rockman, 1993: 6); credible commitment not to alter the rules of the game each time there is a government change; and the ability to uphold promises

(Cox and McCubbins, 2001: 31).<sup>13</sup> From our work in Latin America (IDB, 2005; Stein et al., 2008) we see countries that seem capable of sustaining policies over time, while others reverse policies frequently, often at each minor change in political winds. In countries with stable policies, changes tend to be incremental, building upon achievements of previous administrations, and tend to be reached by consensus. In contrast, volatile policy environments are characterized by large swings and by lack of consultation with different groups in society.<sup>14</sup>

### *From Cooperation to Policy Adaptability and Policy Stability*

Returning to the logic of Figure 2, focusing on the second arrow, we argue (and show formally in the next section) that polities that happen to be at a more cooperative equilibrium will be able to achieve both more stability and more adaptability than less cooperative polities. The intuition is that in a more cooperative policymaking environment an actor will be more likely to accept a policy change that hurts him in the short run, trusting that this sacrifice will be compensated in the future in another policy domain important for him. For similar reasons, in a more cooperative policymaking environment political actors will be less likely to exploit every political opportunity for a short-term benefit.

### *From Political Institutions to Cooperation*

We fully agree with the plea of Tsebelis for a systemic (general equilibrium), rather than dyadic (partial equilibrium) reading of the effects of political institutions. Yet, the mapping from actual political institutions (regime type, electoral rules and its implications, party systems, etc.) to theoretical constructs such as veto players or structures of intertemporal cooperation (first arrow in the diagram of Figure 2.C) is a complex undertaking. In previous and ongoing work we have

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<sup>13</sup> In the words of Keefer and Stasavage (2003: 407), “governments unable to make credible promises hinder economic development.” In the words of Killick (1995: p. 12) “to be effective policies must be credible; people must believe they will be implemented and will stick.” Clearly the notion of stability captures the spirit of the discussion on policy credibility in the economics literature. See Alt (2002), Barro and Gordon (1983), Drazen (2000), Granato (1996), Kydland and Prescott (1977), Persson and Tabellini (2000), and Rodrik (1995).

<sup>14</sup> Chile is a clear example of the former (Aninat et al., 2008), while Argentina is a clear example of the latter (Spiller and Tommasi, 2007). Furthermore, according to various policy case studies (IDB, 2005) as well as according to the international datasets we use in this paper, Chile not only has more policy stability, but also better policy adaptability than Argentina. Rofman et al. (2008) is a recent study showing Chile’s policymaking as both more stable and more adaptable than Argentina’s in the domain of pension policy. In Argentina, the government of the day has changed several aspects of the pension system at the stroke of the pen, but (unlike its Chilean counterpart) it has failed to address the most important problems of the system. Furthermore, the policymaking style in the case of Chile has been much more analytical and consensual.



identified a number of characteristics of political institutions that tend to facilitate more cooperative policymaking. These characteristics include institutionalized and programmatic party systems, legislatures with strong policymaking capabilities, professionalized bureaucracies, and independent judiciaries (IDB, 2005; Stein and Tommasi, 2007; Machado et al., 2008). In this paper we focus on the “reduced form” characterization of political systems that is the configuration of veto players and study its implications from an intertemporal perspective. (For brevity we focus on the *number* of veto players.)

### *From the Number of Veto Players to Cooperation*

As previously stated, based on the static veto player logic, additional veto players are potential obstacles to policy change. From an intertemporal point of view, however, increasing the number of (veto) players can have different effects, including that of facilitating agreements leading to policy changes.<sup>15</sup> An additional player, especially if he/she is going to be around in the future, might play a role in the enforcement of agreements among other players whose consent is necessary to change policy.

Moreover, as an exercise in institutional comparative statics, a higher number of veto players today also means more veto players in the future. That fact, *ceteris paribus*, increases the likelihood that any given player at the table today will be at the table again in the future, thus affecting his incentive to cooperate today.

More generally, thinking about cooperation through a repeated game logic, any parameter of the game (including the number of veto players) might enter the analysis not only affecting behavior on the equilibrium path of cooperation, but also through its impact on players’ payoffs resulting from deviations from that path. As we will show in the example model of the next section, one can construct equilibrium strategies in such a way that the number of veto players has the effect of decreasing the payoff of some deviations from the cooperative equilibrium path. Hence more veto players make deviations less attractive and cooperation more likely. In such cases, *veto players could be an obstacle to changing policy for the wrong reasons, while*

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<sup>15</sup> Clearly there are other mechanisms beyond the intertemporal strategies we emphasize here by which more people at the table (with or without veto power) *might* have a positive effect on some decisions, as those emphasized in the literature on consensual democracy (see, for instance, McGann, 2004) and deliberative democracy (see, for instance, Elster, 1998, and Fearon, 1998).

*facilitating adequate policy responses to changes in the environment.* The model of the next section is a very simplified example that illustrates this point.

### 3.4 A Model

Imagine a polity composed of  $N$  players (actors, parties, sectors). These players interact repeatedly and discount the future at a common rate  $\delta \in [0,1]$ . For concreteness, imagine that there are  $N$  political parties, each of which is a perfect agent for a relevant socioeconomic constituency. We are ignoring, as veto player theory implicitly does, problems of agency (and of political inclusion more broadly).<sup>16</sup>

Let  $\Omega = \{1, 2, \dots, N\}$  be the set of players. Each player will maximize an objective function  $\sum_t \delta^t U_i(X_t, \Theta_t)$ , to be explained in detail below.

Let  $\Theta_t$  be a vector that characterizes the state of the world at time  $t$ , that is the economic, societal, and environmental conditions on which policy operates. In the context of this model we will say that policy is *adaptable* if it responds adequately to the state of the world  $\Theta$ ; and that policy is *stable* if it does not change for reasons other than  $\Theta$ .

Let  $X_t$  be the vector of policies at time  $t$ . Policies are constrained to belong to a set  $\Psi$  of feasible policies. Policies will map into welfare levels (utility) for the players, conditional on the state of the world  $\Theta_t$ . Policies will be valued differently under different conditions (e.g., irrigation projects are valued more if droughts rather than floods are expected, but farmers will tend to value irrigation projects more than city dwellers.) Almost any interesting policy situation we can think of involves at the same time elements of conflict and elements of commonality of interest. In narrow economic terms, I want policies that favor me and you want policies that favor you, but we both have a common interest in policies that are not too damaging overall, and in policies that solve pressing problems. If the country is suffering from very high inflation, we all want some form of stabilization, although different ways of stabilizing the economy have different distributive costs and benefits. The specification of the payoff function  $U_i(X, \Theta)$  that we use below reflects that mix of conflicting and common interests in a simple manner. Similarly,

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<sup>16</sup> As we discuss in Section 5, extending the models to include such concerns constitutes a necessary next step.

we assume a simple formulation for the stochastic process  $\Theta_t$ , and the way in which it affects the connection between policies and welfare.

Let us simplify the vector  $\Theta_t$  to the scalar  $\theta_t$ , which takes values  $1, 2, \dots, N$ , each with probability  $1/N$ , indicating which “sector” is more productive (or more needy, in an insurance interpretation) each period. Let the set of feasible policies  $\Psi$  be the unit  $N$ -simplex (so that  $\sum_i x_{it} = 1$ , and  $x_{it} \geq 0 \forall i \forall t$ ), and the payoff of each player in each period be  $U_{it} = x_{it} + \alpha I_t$ , where  $I_t$  is an indicator function that takes the values

$$I_t = \begin{cases} 1 & \text{if } x_{j_t} = 1 \text{ for } j = \theta_t \\ 0 & \text{otherwise.} \end{cases}$$

This formulation for the  $\Theta_t$  process will imply that if  $\theta_t$  takes the value  $j$  it would be welfare-enhancing to have policies favoring sector  $j$  in period  $t$ . For concreteness we can think of  $x_{it}$  as shares of a budget received by each party, and each player cares about his own share as well as about an externality received if the budget is allocated in the most efficient way—in this simple example, giving all the budget to the favored sector. (Nothing substantial will change, only the tediousness of the algebra, if we assume a smoother formulation where the optimal allocation is not a corner solution, and where preferences are not linear.) To make the problem interesting, we assume  $\alpha < 1$ ; otherwise anyone would always choose the optimal allocation in a trivial manner.<sup>17</sup>

The **political decision-making process** consists of  $v$  (veto) players ( $v < N$ ) sitting at the decision table in each period, and then making a decision through some bargaining protocol among those  $v$  players. The final voting rule is unanimity, as implied by the definition of veto players. Who gets to sit at the table in each period is determined by a power allocation rule. We will assume for simplicity that each of the  $N$  players has an identical probability  $v/N$  of being a veto player at time  $t$ .<sup>18</sup> This can be thought of as a political system with  $N$  parties, where  $v$  of

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<sup>17</sup> The “budget” interpretation facilitates the exposition (and some linearity assumptions facilitate the algebra), but the formulation can easily stand for more general sets of policies that map into payoffs for each player, with elements of conflict of interest (captured by the feasible set of policies restricting the sum of utilities), and of common interest in the right type of policy adjustment, captured by the second term of the payoff function.

<sup>18</sup> Explicitly modeling actions trying to affect the probability of staying in power should provide interesting interactions with the intertemporal cooperation issues highlighted here. Such extensions constitute an important next step in the research agenda.

them will form the government at any point in time, and in which all the parties are symmetrical ex-ante and have the same chances of being part of the government. For concreteness and simplicity of exposition, we use a particular specification for the bargaining protocol among veto players: a one-round closed rule. Assume that a (political) state variable  $\mu_t$  partitions the set of players  $\Omega$  into three subsets in each period. The first of those three sets is a singleton, i.e., a set composed of only one player,  $a_t$ , who will be the agenda setter, as in the random recognition rule in Baron and Ferejohn (1989). The second set  $W_t$  will contain  $(v-1)$  players, who will vote on the basis of a proposal made by  $a_t$ . The approval of each of those  $(v-1)$  voters is necessary for the proposal to pass. Let  $V_t = W_t \cup \{a_t\}$  be, then, the set of *veto players* at time  $t$ . The rest of the players, belonging to the set  $\Omega/V_t$ , will be outside the table.

In each period, after the random variables  $\mu$  and  $\theta$  are realized, the agenda setter  $a_t$  will propose an allocation, a vector  $X_t^a = \{x_{1t}^a, x_{2t}^a, \dots, x_{Nt}^a\}$ . After that, the  $(v-1)$  players belonging to  $W_t$  will vote. The decision of each of these voters in each period is a function  $\phi$  mapping the set of possible allocations  $\Psi$  (an  $N$ -dimensional simplex) to the set  $\{0,1\}$ , where 0 means voting against the proposal, and 1 means voting for the proposal, so that  $\phi_{it} \in \{0,1\}$ .<sup>19</sup> If all the voters vote in favor, that is if  $\phi_{it} = 1 \quad \forall i \in W_t$ , then the allocation implemented  $X_t$  will be equal to the one proposed by the agenda setter,  $X_t = X_t^a$ . Otherwise, every player obtains a status quo payoff which we normalize to 0 for notational simplicity.<sup>20</sup>

Having described the game, we now proceed to solve it. The steps of our analysis follow a standard usage in the study of cooperation in this type of games. We start by analyzing non-

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<sup>19</sup> We assume away mixed strategies, for simplicity.

<sup>20</sup> The closed-rule bargaining protocol is chosen to simplify the exposition. Our results generalize to a broader class of bargaining protocols. McCarty and Meirowitz (2007, Chapter 10), provides an excellent summary of bargaining protocols. Most of the literature has focused on majority-rule bargaining a la Baron and Ferejohn (1989). In our case we are working with unanimity bargaining, as in Rubinstein (1982), since unanimity is the formal definition of veto players. Also, nothing substantial will change if we assumed a status quo payoff different from zero. An extension we hope to derive in future work will explicitly make the status quo at  $t$  equal to the policy vector at  $t-1$ . That will be a very worthwhile, but complex, extension, since will take us away from simple repeated games to the realm of truly dynamic games with state variables. Such formulation will generate additional strategic linkages of policy over time, linkages that as often the case in repeated and dynamic games, could induce a variety of different connections between the exogenous variables (such as  $v$ ) and the endogenous ones. Yet, treating each period as dealing with an independent issue with an exogenous status quo is not too unrealistic in the broad interpretation of frameworks such as Tsebelis' or ours. Both deal with the overall policymaking process of a polity, in which case we can imagine that  $\theta$  represents the main issue of the day, which is a different one each time, and on which the status quo is the outcome of substantial drift and unintended consequences of policies chosen long ago.

cooperative equilibria; then we explore first-best allocations, and we construct strategies that can support first-best allocations as part of a cooperative equilibrium to the repeated game. We will show that in non-cooperative equilibria, policies will not adjust to economic shocks, while in cooperative equilibria, they will. We will perform comparative statics to see how the parameters of the game, in particular the number of veto players  $v$ , affect the feasibility of cooperation, and hence the adaptability of policies.

### *Non-Cooperative Equilibrium*

It is convenient to start by specifying the outcome for the case of the one-shot version of this game (or equivalently, for the limit case of  $\delta = 0$ ). It is easy to verify that, given  $\alpha < 1$ , the stage game has a unique subgame-perfect equilibrium, in which the agenda setter proposes an allocation giving slightly above zero to each of the other  $(v-1)$  players at the table, nothing to anyone outside the table, and keeps almost the whole budget for himself.<sup>21</sup> Formally, that leads to the allocation vector  $X^N = \{x_{1t}^N, x_{2t}^N, \dots, x_{Nt}^N\}$  such that

$$x_{it}^N = \begin{cases} 1 & \text{for } i = a_t \\ 0 & \text{for } i \neq a_t \end{cases}^{22}$$

As is well known from the theory of repeated games, the indefinite repetition of the one-shot subgame perfect equilibrium is also an equilibrium in the repeated game for any value of the discount factor  $\delta$ . This non-cooperative equilibrium gives players an expected value of

$$V^N = \left( \frac{1}{1-\delta} \right) \left( \frac{1+\alpha}{N} \right).$$

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<sup>21</sup> Given the rule of unanimity and the simultaneity of the voting moves, the one-shot game has multiple equilibria since once one of the voters has rejected the proposal any vote by another voter constitutes a weak best response. It is easy to get rid of all the other equilibria by using subgame perfection jointly with iterated elimination of weakly dominated strategies (McCarty and Meirowitz, 2007, Chapter 5).

<sup>22</sup> More generally, the allocation could be defined as  $x_{it} = 0$  for  $i \in \Omega/V_t$ ,  $x_{it} = \varepsilon$  for  $i \in V_t$ , and  $x_{it} = 1 - (v-1)\varepsilon$  for  $i = a_t$ . We follow the standard convention of letting  $\varepsilon$  go to zero, and of assuming that players who are indifferent between two actions at zero, will chose the one they would have chosen for  $\varepsilon > 0$ . In a more general (non-budget) interpretation, this means that the agenda setter picks a vector of policies that maximizes his utility subject to being preferred to the status quo by the other  $(v-1)$  veto players.

The first term on the right hand side brings the value of the series of allocation to the present and comes from the fact that  $(1 + \delta + \delta^2 + \dots) = \frac{1}{1 - \delta}$  for  $\delta \in [0, 1]$ . The second term comes from the fact that on average each player gets to keep the whole budget one out of  $N$  periods and every player receives the externality  $\alpha$  each time the agenda setter happens to be the player receiving the shock  $\theta_t$ , an event which also occurs with probability  $1/N$ .

Notice that in this non-cooperative equilibrium policies do not adjust to economic shocks  $\theta$ , hence they are not adaptable, while they do move around depending on who happens to be the agenda setter of the period. Hence they are volatile (they are not stable). We will see below that the opposite is the case in more cooperative equilibria.

### *First Best*

In order to explore other equilibria we start by specifying the first best allocation, the one that maximizes the sum of the objective functions of the  $N$  players. It is easy to see that the optimal allocation gives the full budget to the sector that received the productivity shock  $\theta_t$  in each period. That is, the optimal vector  $X^*(\theta_t)$  contains

$$x_{it}^* = \begin{cases} 1 & \text{for } i = \theta_t \\ 0 & \text{for } i \neq \theta_t \end{cases}.$$

Expected welfare from the first best is

$$V^* = \left( \frac{1}{1 - \delta} \right) \left( \frac{1}{N} + \alpha \right).$$

The difference with the non-cooperative case lies in the fact that now the externality is realized every period; clearly  $V^* > V^N$ .

### *A Strategy to Induce Cooperation*

Even though repeated games have multiple equilibria,<sup>23</sup> most of the literature applying repeated games has focused on comparing equilibria characterized by different degrees of cooperation; in most cases choosing to focus on relatively simple “punishment strategies” in order to induce

cooperation. This is typically done by positing a strategy profile (a set of strategies for the players) and then studying under what subsets of parameters of the game such strategies can be supported as an equilibrium.<sup>24</sup> We follow that practice and we look now at a strategy profile that could allow implementation of the first best in the repeated game. The strategy profile calls for cooperation along the equilibrium path sustained by the threat of reversion to non-cooperation (the subgame-perfect equilibrium of the one-shot game) forever. This type of “grim trigger” strategy is particularly suitable for analyzing repeated games of complete and perfect information such as this one (de Figueiredo, 2002). In this model, cooperation along the equilibrium path requires the agenda setter proposing the first best allocation  $X^*(\theta_i)$ , and the  $(v-1)$  other veto players accepting that allocation,  $\phi_i(X^*(\theta_i))=1 \quad \forall i$ . This leads to the payoff  $V^*$ . The punishment strategy we postulate is one that reverts the game to non-cooperation forever if a proposal different from  $X^*(\theta_i)$  is ever accepted and (hence) implemented.<sup>25</sup> In that punishment path, everybody receives  $V^N$ .

We now need to verify for what values of parameters this postulated strategy profile constitutes an equilibrium, in the sense that each player has no incentive to deviate from the equilibrium path, given that other players are sticking to the postulated strategies. A number of results in the theory of repeated games simplify this effort; a crucial one is the “one-shot deviation principle,” which tells us that in order to verify whether a postulated equilibrium is indeed subgame perfect, it is enough to verify that there is no profitable one-period deviation (Mailath and Samuelson, 2006). Identifying when cooperation is sustainable requires determining who has the greatest incentive to defect and then calculating the conditions under which that person will cooperate. In the context of this model, the person with the greatest incentive to defect in any given period is the player who turns out to be the agenda setter, provided he is not the same agent who received the “efficiency” shock  $\theta_i$ . (In this latter case the

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<sup>23</sup> A number of “folk theorems” have demonstrated that for high enough  $\delta$ , every feasible payoff that is individually rational can be supported as a subgame-perfect equilibrium (Fudenberg and Tirole, 1991; Morrow, 1994; McCarty and Meierowitz, 2007).

<sup>24</sup> See for instance Stokes (2005), de Figueiredo (2002), Carruba and Volden (2000), and Nocke and White (2007).

<sup>25</sup> In a technical appendix available upon request we demonstrate that this punishment strategy is more effective than an alternative one in which punishment is triggered just by the proposal, independently of whether it is accepted by the other veto players. It turns out that the strategy of making all the veto players jointly responsible enforces cooperation for a larger set of parameters.

agenda setter will be happy to conform to the cooperative requirement of keeping the whole budget for himself).

If an agent who happens to be the agenda setter of the period were to deviate, he needs to consider the possible reaction of the other  $(v-1)$  veto players, in order to ascertain his payoff from a proposal different from  $X^*(\theta_t)$ . For that reason we work by backwards induction from the behavior of the voters of a period of possible deviation.

Imagine a proposal different from  $X^*$  was made. Take as given the action of the other  $(v-2)$  voters as accepting the deviant proposal, and consider the decision of one  $i \in W_t$ . If he accepts the deviant  $X_t^a$ , it is implemented, and the play of the game switches to non-cooperation forever after. If he rejects it, he and everyone else gets zero in that period, but the equilibrium remains cooperative forever after.<sup>26</sup> In comparing this two options, voter  $i$  will pay special attention to how much the deviant proposal gives to him,  $x_{it}^a$ . Define  $x^0$  as a critical value such that  $i$  accepts the proposal if and only if it gives him  $x_{it}^a \geq x^0$ . The player will be indifferent, then, if he were to receive  $x^0$  in this deviation, that is if  $0 + \delta V^* = x^0 + \delta V^N$ . This implies that

$$x^0 = \left( \frac{\alpha\delta}{1-\delta} \right) \left( \frac{N-1}{N} \right).$$

The most profitable deviation for the agenda setter which might be accepted will then offer  $\left( \frac{\alpha\delta}{1-\delta} \right) \left( \frac{N-1}{N} \right)$  to each of the *other*  $(v-1)$  veto players and will give zero to everyone outside the table. Such a strategy will allow him to keep  $1 - (v-1) \left( \frac{\alpha\delta}{1-\delta} \right) \left( \frac{N-1}{N} \right)$  for himself in the deviation period. That would be a worthwhile deviation as long as

$$1 - (v-1) \left( \frac{\alpha\delta}{1-\delta} \right) \left( \frac{N-1}{N} \right) + \delta V^N > \alpha + \delta V^*.$$

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<sup>26</sup> As explained in the previous footnote, we are looking at strategies that prescribe returning to the cooperative equilibrium path if a deviant proposal does not pass. Remember also that, for expositional simplicity, we are assuming a closed-rule bargaining protocol, and normalizing the disagreement payoff to zero; the generality of our results does not depend on either of these two assumptions.



The converse needs to be true in order for our equilibrium to be sustained, which is equivalent to what we express in the following Lemma.

Lemma:

*Under the proposed strategies, cooperation implementing the first-best allocation can be sustained if and only if*

$$\left(\frac{\delta}{1-\delta}\right) \geq \left(\frac{N}{N-1}\right) \left(\frac{1-\alpha}{\alpha}\right) \left(\frac{1}{v}\right).$$

This is our main result. It is easy to see that the inequality in the Lemma is relaxed by having a larger number of veto players  $v$ . Having more players sitting at the table reduces the incentives to deviate from cooperation and hence makes cooperation sustainable over a larger set of other parameters. In the usual parlance, having more veto players “makes cooperation more likely.”<sup>27</sup>

Given that cooperation in our model leads to the optimal allocation  $X^*(\theta_t)$ , we say that, in the equilibrium we have constructed *a larger number of veto players increases the likelihood of adjusting policies to economic shocks*. Hence, in this example, more veto players increase the adaptability of policies, contrary to the prediction of veto player theory in Proposition 2 above.

Our model also contradicts Proposition 1 from veto player theory. In our cooperative equilibrium we have both more adaptability (more response to  $\theta$ ) and more stability (less response to  $\mu$ ) than in the non-cooperative case. If different polities were in different equilibria, our model would predict a *positive* correlation between adaptability and stability (between decisiveness and resoluteness).

Since our model and the particular cooperative equilibrium we have built constitute just examples, not general cases, we express our results in a less stringent manner than veto player approaches.

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<sup>27</sup> In the formulation of this section, the channel by which more veto players can lead to more cooperation is the fact that the more players at the table, the more costly an opportunistic deviation for the agenda setter. As explained before, there are other channels that could bring about this result. For instance, my willingness to cooperate today (to permit an adjustment unfavorable to me) could be affected by my likelihood of sitting again at the table in the future, when efficiency might call for reallocation towards me. (From personal experience in budget decision-making at our respective institutions, we recognize this as an important channel.)

PROPOSITION 1' (Intertemporal Approach): *A more decisive polity is not necessarily less resolute. There are some forces (of different equilibria in repeated-interaction contexts) leading to a positive association between decisiveness and resoluteness (adaptability and stability).*

PROPOSITION 2' (Intertemporal Approach): *Many veto players do not necessarily make significant policy changes difficult or impossible. There are some channels through which more veto players can increase policy adaptability.*

## 4. Empirical Analysis

In this section we provide some evidence consistent with our argument. This is a first attempt to provide empirical evidence on our results by performing a cross-national analysis on an international dataset containing proxies for the variables of interest. Our preliminary findings suggest that some of the propositions coming out of the veto player literature might not necessarily hold—more adaptability does not necessarily imply lower stability, and a higher number of vetoes does not necessarily imply lower adaptability. Furthermore, the results obtained are consistent with the idea that intertemporal cooperation may allow policy makers to reach certain agreements on policy that are not possible in the more traditional veto player models.

### *The Dependent Variables*

In order to capture the notions of policy stability and policy adaptability discussed in Section 2, we rely on data from a variety of international data sources. We use four different measures of policy stability. The first one (*Fraser volatility*) is based on the Fraser Index of Economic Freedom, an index compiled by the Fraser Institute which attempts to capture the extent to which policies in a country are consistent with the free operation of markets. Since we are interested in the stability of policies—or, conversely, their volatility—we use the standard deviation of the index (redefined so that larger values indicate less volatility) as our first measure of policy stability.<sup>28</sup> The second measure of stability (*Policy changes*) comes from the Global Competitiveness Report (GCR). It captures the extent to which legal and political changes

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<sup>28</sup> The series for each country was detrended (using a quadratic trend) before calculating the standard deviation, so that countries that moved steadily towards more (or less) free market policies throughout the period are not

undermine a firm's planning capacity. Our third measure (*Government commitment*), also from the GCR, captures the extent to which new governments honor the contractual commitments and obligations of previous ones. Our fourth measure (*Policy consistency*), drawn from the Profils International database, captures the "consistency and continuity of government action on economic matters." In addition to these four, we also use a summary variable (*Stability*) that combines these four measures into a composite index, constructed to maximize the use of the available information and obtain the largest possible number of observations.<sup>29</sup> Table 1 in the Appendix provides additional details on these measures.<sup>30</sup>

To capture policy adaptability, we also used four different measures. The first (*Adaptability-BTI*), taken from Bertelsmann Transformation Index, is associated with the ability of the political leadership to act flexibly, its capability for learning, and whether political leaders can replace failing measures with innovative policy. The second (*State responsiveness*), from the Columbia University State Capacity Survey, rates the State's ability to respond effectively to domestic economic problems. The third (*Decision-making capacity*), from the Profils International dataset, rates countries according to the "Decision-making capacity of the political authorities in economic matters." The final measure (*State effectiveness*), also from Columbia University State Capacity Survey, rates the state's ability to formulate and implement national policy initiatives. As in the case of stability, here we also compute a summary variable (*Adaptability*) on the basis of the four measures discussed above.

One potential problem with the use of survey data is that it may be susceptible to subjectivity bias. Because our composite indices have been compiled through different surveys over several years, a usual criticism of survey data, which is that opinions on policies depend on "the general mood" given the current state of the country, is somewhat less serious in this case. While we would have liked to have more objective data instead of relying on survey information alone, we have not found data with broad geographical coverage. We have tried, however, to validate our stability and adaptability measures by comparing them with objective

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characterized as having volatile policies, unlike those that present a seesaw pattern. Our more detailed analysis of these data for the Latin American cases justifies this procedure.

<sup>29</sup> All the components of the index were given the same weight. Berkman et al. (2008) describe the procedure used for cases in which some of the values of the individual components were not available.

<sup>30</sup> As Table 1 in the Appendix shows, data for some of our measures are available for more than one year. Given the intertemporal nature of policy characteristics such as stability and adaptability, rather than exploiting the time series dimension of the data (which is very limited, anyway), we average the available data for all existing years in order to come up with a single data point for each variable in each country.

measures linked to specific policy domains for subsets of countries. For example, we have found a significant and positive relationship between our measures of policy adaptability and a measure computed by Braun and Di Gresia (2002) for a sample of countries that captures the extent to which fiscal policy responds countercyclically to the fluctuations in economic activity, a measure of fiscal policy adaptability.<sup>31</sup>

### *Testing the Hypotheses from Veto Player Theory*

Veto-player theories have very sharp and conclusive predictions that we have summarized in Propositions 1 and 2 above. Our approach calls into question the generality of those predictions, stating that there are channels and conditions that can make these predictions more or less likely to be fulfilled. In this subsection we present evidence that rejects these veto-player hypotheses. In later subsections we provide some evidence attempting to reconcile veto player predictions with a broader framework that incorporates intertemporal considerations.

**Proposition 1:** “...a more decisive polity must necessarily be less resolute...”

Following the traditional veto player literature, we would expect a negative correlation between adaptability and stability. However, it is not easy to find a negative correlation in our data. As Table 1 shows, the partial correlation between the variables that proxy adaptability and stability and the composite indexes is not negative even after controlling for the initial level of development of the country, the group or *region* the country belongs to, and the *legal origin* of the country.<sup>32</sup> On the contrary, all of the correlations are positive, and 7 out of 17 are significant at least at the 5 percent level.<sup>33</sup>

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<sup>31</sup> An additional exercise was to look at the correlation between the variables and similar variables we constructed in a more detailed manner for a smaller sample of Latin America and the Caribbean countries. The survey questioned more than 150 experts in 18 Latin American countries, was explicitly designed with these characteristics of policies in mind, and was cross-checked with evidence from a number of comparative studies in specific policy areas (IDB, 2005). Within the Latin American subsample, the correlation between the variables from that analysis and the ones used here is positive and highly significant for both stability and adaptability.

<sup>32</sup> These control variables are explained in the Appendix.

<sup>33</sup> All the results we report in this section include democracies and non-democracies in the sample. Considering only democracies does not change the results. If anything, it strengthens the significance in most cases.

**Table 1. Correlation between the Components of Stability and Adaptability**

<b>Stability Components</b>	<b>Adaptability Components</b>				<b>Adaptability</b>
	Adaptability (BTI)	State Responsiveness	Decision Making Capacity	State Effectiveness	
Fraser Volatility	0.12 82	0.24** 90	0.20 70	0.23** 90	
Government Commitment	0.12 47	0.34*** 59	0.18 52	0.17 59	
Policy Changes	0.28 47	0.16 58	0.49*** 51	0.12 58	
Policy Consistency	0.35*** 61	0.16 73	0.52*** 80	0.25** 73	
<b>Stability</b>					0.12 117

*Note:* significant at 1% level (\*\*\*), and 5% (\*\*)

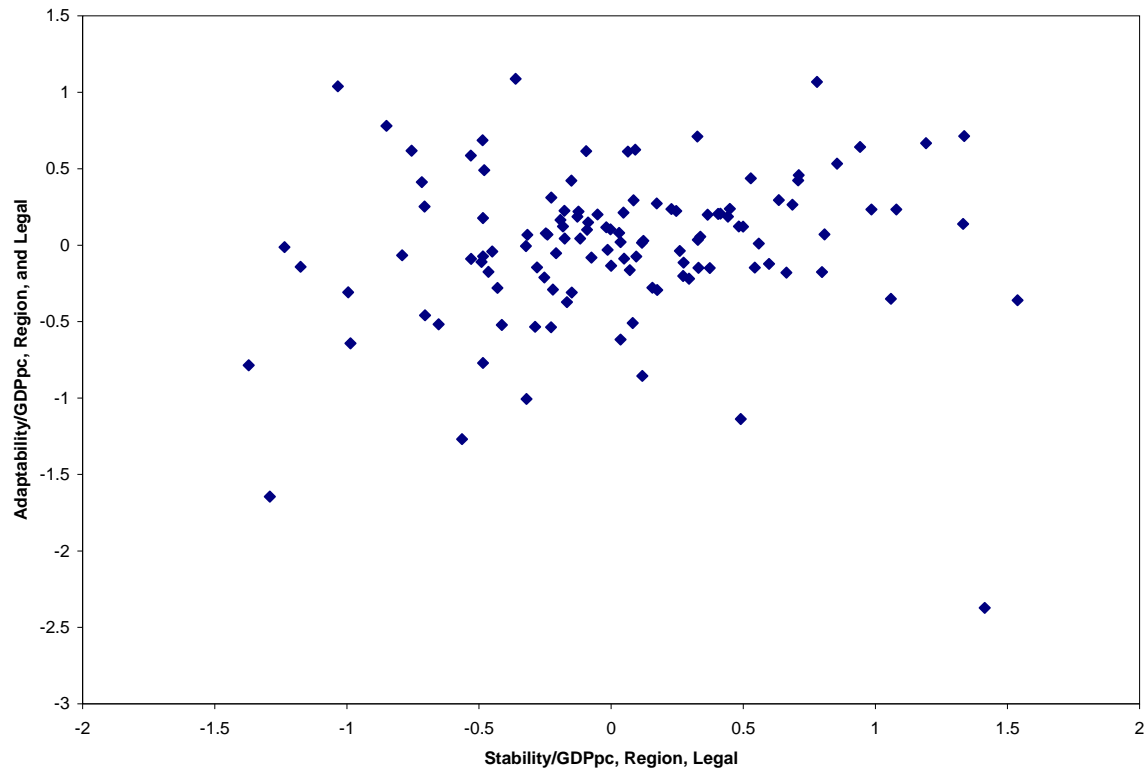
We have controlled for Ln(GDPpc), Region, and Legal Origin.

Second line in each row is number of observations.

Figure 3 shows a scatter diagram that plots the residuals of the two composite variables after controlling for development, region, and legal origin. From these data, it would be difficult to argue that a negative correlation exists between stability and adaptability for this cross section of a large number of countries.<sup>34</sup> This leads us to reject (a simple version of) proposition 1. From now on, for brevity, we use the composite indexes as proxies for adaptability and stability.

<sup>34</sup> As we will see below, this does not imply that a trade-off cannot exist for subset of the sample.

**Figure 3. Stability and Adaptability Scatter Plot**



**Proposition 2:** “... more veto players reduce policy adaptability”

This second hypothesis is one of the central tenets of the veto player approach. (Contrary to that, in the model above we showed that there are certain conditions under which increasing the number of vetoes may also increase the adaptability of policies.) For testing this hypothesis, we use the variables that have been traditionally employed in broad cross-national empirical studies in the veto player tradition. The first variable (*Executive constraints – Polity IV*) is taken from the Polity IV project, and it refers to the extent of institutionalized constraints on the decision-making powers of chief executives, whether individuals or collectivities. The second variable (*Polcon V*) is taken from the Political Constraints database and it refers to the number of independent branches of government with veto power, taking into account their degree of preference alignment. Finally, (*Checks*) taken from the Database of Political Institutions, adds the number of checks that a country has.

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As indicated in Table 2, the regression results on the composite index of adaptability show that vetoes are always positive and significant in five out of six specifications.<sup>35</sup> A higher number of vetoes seems to lead to higher adaptability of policies, contrary to the veto player result stated in Proposition 2. (The results on the veto player variables are also positive and significant with respect to stability, as predicted both by veto player theories and by our intertemporal approach.)

**Table 2. Regressions on Adaptability (weighted least squares)**

	(1)	(2)	(3)	(4)	(5)	(6)
Executive Constraints (Polity IV)	0.09* ** (0.03)			0.12*** (0.04)		
PolconV		0.82*** (0.21)			0.81*** (0.22)	
Checks			0.07* (0.04)			0.07 (0.05)
Ln(GDPpc)	Yes	Yes	Yes	Yes	Yes	Yes
Region				Yes	Yes	Yes
Legal Origin				Yes	Yes	Yes
AdjR <sup>2</sup>	0.43	0.45	0.40	0.50	0.51	0.46
Obs	131	133	131	130	132	130

Note: Significant at 1% level (\*\*\*), 5% (\*\*), and 10% (\*)

### *Some Evidence Incorporating Intertemporal Factors*

The veto player literature postulates (Proposition 1) a stark negative relation between stability and adaptability. In our view, stability and adaptability are both desirable traits that even though rival at some level, are both more likely to emerge in polities with higher degrees of intertemporal cooperation. Intuitively, we can think of the negative correlation predicted by veto player theories as operational along an iso-cooperation frontier, while different countries might be located on different iso-cooperation lines as illustrated in Figure 1. More cooperative polities will tend to have more of both desirable traits, while the two traits might trade off for a given level of cooperation. In order to explore this logic in the data, we take two steps. In this sub-

<sup>35</sup> For the empirical analysis we use weighted least squares according to the number of sources we have used for constructing the composite index of adaptability. This way we give more weight to those countries whose data has been generated with a higher number of sources. The results are the same, both in terms of signs and significance, if regressions are run without weights.

section, we look at the impact on stability and adaptability of some possible proxies for the determinants of intertemporal cooperation that we have identified in previous work. In the next sub-section we further explore the relationship between veto players, intertemporal features and policy characteristics. This exercise is intended to check whether the negative correlation between stability and adaptability predicted by the veto player approach may be recovered once we control for intertemporal cooperation.

In previous and ongoing work (Stein and Tommasi, 2007; Machado et al., 2008), we have explored the determinants of cooperation in policymaking. We have identified a number of institutional dimensions which, according to the intertemporal logic, should matter for cooperation. These include institutionalized party systems, legislatures with strong policymaking capabilities and stable membership, stable cabinets, professional bureaucracies, independent judiciaries, and a history of constitutional stability. Finding good proxies for some of these dimensions is no simple task. Some of the difficulties include limitations in data availability and unresolved identification problems. In spite of that, the quantitative evidence presented here together with qualitative evidence provided in various case studies in IDB (2005) and Stein et al. (2008) suggest that most of these dimensions do matter for cooperation, and for policy stability and adaptability.

In this section we present some evidence indicating that factors likely to lead to more cooperative policymaking tend to be associated with policies that are both more stable and more adaptable. The variables we use, for which there is sufficient cross-national data, are the following:<sup>36</sup>

*Party system institutionalization:* Higher levels of party institutionalization may allow polities to internalize changes of particular individuals in government, providing the conditions for intertemporal commitments. This variable, constructed from several sources, attempts to proxy for whether there is a stable and socially rooted party system.

*Judicial independence:* An independent judiciary may provide additional enforcement mechanisms to the transactions made in the present, increasing the probability that actors may be willing to engage in intertemporal agreements. This variable has been constructed from three

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<sup>36</sup> Definitions and sources are in the Appendix.



different sources that attempt to measure the same phenomenon: whether the judiciary is subject or not to interference by the government or other political actors.

*Cabinet stability*: Longer tenure of specific policymaking individuals might facilitate intertemporal coordination. This variable is the inverse of the average number of changes of the president/premier and/or 50 percent of the cabinet in a year.

In addition to all these individual variables, and mirroring what we have done with our dependent variables, we build a composite index of intertemporal cooperation that combines all three of them. We call that variable the *Intertemporal Cooperation Index*.

Regression results are presented in Table 3. The regression results for stability and adaptability seem to indicate that more institutionalized political parties, more independent judiciaries, and more stable cabinets provide greater stability and adaptability. The intertemporal index works similarly. Higher levels of the index provide greater stability and adaptability, thus supporting the idea that those conditions that facilitate intertemporal cooperation may also allow countries to obtain more of both policy traits.

**Table 3. Intertemporal Cooperation, and Stability and Adaptability (weighted least squares)**

	Stability					Adaptability				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Party System						0.46***			0.17	
Institutionalization	0.10 (0.10)			-0.15 (0.10)		(0.10)			(0.11)	
Judicial Independence		0.32*** (0.06)		0.34*** (0.07)			0.48** * (0.07)		0.41*** (0.08)	
Cabinet Stability			0.36* * (0.18)	0.29 (0.17)				0.29 (0.24)	0.19 (0.21)	
Intertemporal Cooperation Index					0.34*** (0.09)					0.66*** (0.10)
Ln(GDPpc)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Region	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Legal Origin	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AdjR <sup>2</sup>	0.45	0.57	0.47	0.57	0.52	0.54	0.61	0.46	0.62	0.60
Obs	119	118	120	117	121	130	129	131	128	132

Note: Significant at 1% level (\*\*\*), 5% (\*\*), and 10% (\*).

### *Intertemporal Cooperation and Veto Players*

We believe that the factors identified in the veto player literature are important and relevant, but the trade-off between adaptability and stability might sometimes be overcome by cooperation. The analysis in Table 3 above suggests that intertemporal factors seem to matter, with both stability and adaptability increasing when institutions are more favorable to cooperation. Following the logic of Figure 1, we expect that once intertemporal factors are controlled for, countries might face the adaptability/stability trade-off highlighted in Proposition 1 of the veto player theory. In Table 4 we control linearly for the intertemporal factors, and we also split the sample into two groups (one containing those countries scoring high on our intertemporal index and the other containing countries scoring low values) in order to check whether the tradeoff may be more prevalent in those countries with (substantially) lower ability to cooperate.

**Table 4. Correlation between Adaptability and Stability**

	Whole sample		Sample divided by			
	No Intertemporal control	Intertemporal control <sup>2</sup>	Intertemporal Index <sup>3</sup>		Intertemporal Index <sup>4</sup>	
			High	Low	High	Low
Corr(stability, adaptability) <sup>1</sup>	0.12	0.03	0.23*	-0.02	0.40***	-0.60***
N	117	117	65	52	95	22

*Note:* Significant at 1% level (\*\*\*), 5% (\*\*), and 10% (\*)

<sup>1</sup> In all cases controlling for Ln(GDPpc), Regional, and Legal Origin

<sup>2</sup> Controlling additionally for the Intertemporal Cooperation Index

<sup>3</sup> Low and high corresponds to countries being above or below the median (the two groups are not of equal size because the measures of stability and adaptability are missing for some of the observations).

<sup>4</sup> Low and high corresponds to countries being above or below the 25<sup>th</sup> percentile.

We find partial evidence in the data. Once the intertemporal factors are controlled for the correlation between adaptability and stability becomes smaller, albeit still positive. Additionally, a tradeoff seems to exist for those countries with a lower capacity to cooperate intertemporally (partial correlations are negative for the cells including only those countries with low values of the intertemporal index).

In light of these results we include both veto players and our intertemporal measures in trying to explain adaptability. As shown in Table 5, the variables that proxy for the number of

vetoers are still positive but no longer significant in explaining adaptability.<sup>37</sup> One possible extension, the unbundling of the veto player variables into factors more likely to just block changes and factors that are more likely to facilitate intertemporal cooperation, remains to be explored.<sup>38</sup>

**Table 5. Regressions on Adaptability (weighted least squares)**

	(1)	(2)	(3)
Executive Constraints (Polity IV)	0.02 (0.04)		
PolconV		0.33 (0.22)	
Checks			0.01 (0.04)
Intertemporal Cooperation Index	0.65*** (0.12)	0.59*** (0.11)	0.66*** (0.11)
Ln(GDPpc)	Yes	Yes	Yes
Region	Yes	Yes	Yes
Legal Origin	Yes	Yes	Yes
AdjR <sup>2</sup>	0.60	0.60	0.59
Obs	130	132	130

*Note:* Significant at 1% level (\*\*\*), 5% (\*\*), and 10% (\*).

## 5. Parting Thoughts

We have presented an intertemporal framework for the study of the effects of political institutions on policy outcomes, contrasting its implications with those from the prominent veto player theory. In this section we mention briefly some of the pending work required to embed the logic of intertemporal cooperation in broader discussions of governance.

The effect of specific political institutions (beyond abstract constructs such as configurations of veto players) on intertemporal cooperation remains to be explored in further detail. A natural candidate to begin with is the role of an independent judiciary, since that is a case in which veto player and intertemporal cooperation approaches have different predictions. Judicial independence is seen as a veto player in the former, and as an enabler of intertemporal cooperation in the latter.

<sup>37</sup> We also ran each of the models in Table 5 adding an interaction between the veto variable and the intertemporal index, arriving roughly at the same results. The veto player proxies are not statistically significant at any level of the intertemporal index (except for PolconV being positive and significant at high levels of the intertemporal variable). The effect of the intertemporal index is positive and statistically significant at all levels of the veto player measures.

<sup>38</sup> For related intuitions see McGann (2004)

The repeated-game logic presented here might also be helpful in clarifying some broader topics in the literature, such as the discussion on *consensual democracy* versus *winner-take-all democracy* (Lijphart, 1984 and 1999). From the perspective of intertemporal cooperation, both consensual decision-making, as well as its “opposite,” winner-take-all, are associated with behavior in equilibrium being more or less cooperative. The role of particular configurations of political institutions, such as the forms of government or electoral rules, in generating more or less cooperation can be investigated within repeated game logic.<sup>39</sup>

According to the account in this paper, intertemporal cooperation among political actors is the mechanism through which good outcomes are achieved. In our opinion that is a valid point as long as the political actors in the story are good representatives of key socioeconomic actors and/or of the population *in toto*. By taking as given the set of political decision-makers and their preferences, we have implicitly brushed away important issues of representation. In terms of political agency, the players of our model are best thought of as perfect agents (say, parties) of underlying economic constituencies. Various rules of the political game will have an effect not only on the mode of interaction among these representatives, but also on the degree to which they tend to do what is best for their constituents instead of engaging in clientelism, rent extraction and other distortions. Further modeling of cooperation among policymakers in the context of representative democracy constitutes an important next step.<sup>40</sup>

Clearly, cooperation in any given polity depends on a number of factors, not all of which are strictly institutional. Furthermore, there might be institutions that work better to foster cooperation when combined with the structural features (and historical trajectories) of some polities rather than others. Our suggestion is that, before venturing into the difficult terrain of institutional design, it is important to consider the implications of alternative rules in fostering intertemporal cooperation (as well as accountability).

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<sup>39</sup> See McGann (2004) for similar suggestions.

<sup>40</sup> This would also lead to reinterpretation and refinement of empirical analysis, since the effects of political institutions on policy characteristics might often operate through agency channels. (We thank Kaare Strom for raising this point). Another issue that is brushed away in our account here and in that of veto player theories is that of the inclusiveness of representation. We can think of historical instances of fairly cooperative policymaking leading to effective policies benefitting mainly the members of a dominant elite. This seems to have been the case in countries such as Colombia during the *Frente Nacional* power sharing agreement (Cárdenas, Junguito and Pachón, 2008), and Venezuela during the *Punto Fijo* Accord (Monaldi et al., 2008). The progressive democratization of those polities has in some cases led to less effective and less cooperative policymaking styles. In other cases, previous practices of *democracy among gentlemen* have carried over to the more democratic era. Further discussion is provided in IDB (2005, Chapter 7).

## Appendix

**Table A1. Data Definition and Sources**

<b>Variable</b>	<b>Definition and sources</b>
Fraser volatility	<ul style="list-style-type: none"> <li>▪ Source: Fraser Institute</li> <li>▪ Standard deviation of the detrended Fraser Index of Economic Freedom (quadratic trend)</li> <li>▪ 1999-2004</li> </ul>
Policy Changes	<ul style="list-style-type: none"> <li>▪ Source: Global Competitiveness Report</li> <li>▪ Legal or political changes over the past five years have (1=severely undermined your firm's planning capacity, 7=had no effect)</li> <li>▪ 2002</li> </ul>
Government Commitment	<ul style="list-style-type: none"> <li>▪ Source: Global Competitiveness Report</li> <li>▪ New governments honor the contractual commitments and obligations of previous regimes (1=not true, 7=true).</li> <li>▪ 1998, 1999, 2000, 2002</li> </ul>
Policy Consistency	<ul style="list-style-type: none"> <li>▪ Source: Profils Institutionnels-database</li> <li>▪ "Consistency and continuity of government action in economic matters" (from 1=low levels to 4=high levels)</li> <li>▪ 2006</li> </ul>
Stability	<ul style="list-style-type: none"> <li>▪ Source: author's computation</li> <li>▪ Composite index using the previous 4 components</li> </ul>
Adaptability (BTI)	<ul style="list-style-type: none"> <li>▪ Source: Bertelsmann Transformation Index (BTI)</li> <li>▪ The variable is created by BTI's from questions that include ratings for the ability of the political leadership to act flexibly, political leaders' capability for learning, and whether political leaders can replace failing measures with innovative policy.</li> <li>▪ 2006</li> </ul>
State Responsiveness	<ul style="list-style-type: none"> <li>▪ Source: Columbia University State Capacity Survey</li> <li>▪ Rate the state's ability to respond effectively to domestic economic problems, originally on a scale from 1- 10.</li> <li>▪ 1990, 1999, 2000, 2002</li> </ul>
Decision Making Capacity	<ul style="list-style-type: none"> <li>▪ Source: Profils Institutionnels-database</li> <li>▪ "Decision-making capacity of the political authorities in economic matters (responsibility, rapidity, etc)" ranked 1 to 4, 4 being highest.</li> <li>▪ 2006</li> </ul>
State Effectiveness	<ul style="list-style-type: none"> <li>▪ Source: Columbia University State Capacity Survey</li> <li>▪ Rate the state's ability to formulate and implement national policy initiatives</li> <li>▪ 1990, 1999, 2000, 2002</li> </ul>
Adaptability	<ul style="list-style-type: none"> <li>▪ Source: author's computation</li> <li>▪ Composite index using the previous 4 components</li> </ul>
Ln(GDPpc)	<ul style="list-style-type: none"> <li>▪ Source: World Bank World Development Indicators</li> <li>▪ Log of GDP per capita in 1990</li> <li>▪ When data unavailable for 1990, closest year available used</li> </ul>
Legal Origin	<ul style="list-style-type: none"> <li>▪ Source: Quality of Government by La Porta et al 1999.</li> <li>▪ Dummy variables that identifies the legal origin of the Company Law or Commercial Code of each country.</li> <li>▪ Includes: British, French, Germany, Scandinavian, Socialist</li> </ul>
Regions	<ul style="list-style-type: none"> <li>▪ Source: World Bank.</li> <li>▪ Dummy variables according to the country region</li> <li>▪ Includes: Developed, Asia, ECA, LAC, MNA, SouthAsia, Africa.</li> </ul>

Cabinet stability	<ul style="list-style-type: none"> <li>▪ Source: Cross National Time Series database (S22f2), covering 1980-2003.</li> <li>▪ Defined as the inverse of the number of times in a year that a new premier is named and/or 50% of the cabinet posts are occupied by new ministers.</li> </ul>
Party Institutionalization	<ul style="list-style-type: none"> <li>▪ Composed by five variables:</li> <li>▪ Rooted Party System <ul style="list-style-type: none"> <li>• Source: BTI (2006)</li> <li>• To what extent is there a stable, moderate and socially rooted party system to articulate and aggregate societal interests? Ranked from 1 to 7, higher numbers indicating higher levels of a stable party system.</li> </ul> </li> <li>▪ Confidence in Parties <ul style="list-style-type: none"> <li>• Source: Shared Global Indicators Cross-national Database/World Values Survey</li> <li>• How much confidence do you have in the Political Parties? A great deal of confidence (1), quite a lot of confidence (2), Not very much confidence (3) or none at all (4)?</li> </ul> </li> <li>▪ Vote Volatility <ul style="list-style-type: none"> <li>• Source: Author's computation using Mainwaring and Zoco (2007), Kuenzi and Lambright (2001), and Jones (2005)</li> <li>• Volatility is calculated by subtracting the percentage of the vote/seats won by every party in an election from that won in the previous election, taking the absolute value of this result, summing the results for all parties, and then dividing this total by two (Pederson 1984).</li> </ul> </li> <li>▪ Average Age of Parties <ul style="list-style-type: none"> <li>• Source: Database of Political Institutions, 1980/90- 2004</li> <li>• The average of the ages of the 1st government party (1GOVAGE), 2nd government party (2GOVAGE), and 1st opposition party (1OPPAGE), or the subset of these for which age of party is known.</li> </ul> </li> <li>▪ Fairness of Elections. Composed by: <ul style="list-style-type: none"> <li>▪ Free and Fair Elections <ul style="list-style-type: none"> <li>• Source: BTI (2006)</li> <li>• To what extent are political leaders determined by general, free and fair elections? Ranked from 1 to 10, higher numbers indicating freer/fairer elections.</li> </ul> </li> <li>▪ Freedom and legality of elections <ul style="list-style-type: none"> <li>• Source: Profils Institutionnels-database 2006</li> <li>• If no elections, 0; if elections exists, from 1 = little freedom or legality to 4 = high level of freedom and legality</li> </ul> </li> </ul> </li> </ul>
Judicial Independence	<ul style="list-style-type: none"> <li>▪ Composed by three variables</li> <li>▪ Independent Judiciary GCR <ul style="list-style-type: none"> <li>• Source: GCR (2001 through 2006)</li> <li>• The judiciary in the country is independent and not subject to interference by the government and/or parties to disputes (1=not true, 7=true)</li> </ul> </li> <li>▪ Independent Judiciary BTI <ul style="list-style-type: none"> <li>• Source: BTI (2006)</li> <li>• Does an independent judiciary exist?</li> </ul> </li> <li>▪ Rating of Independence <ul style="list-style-type: none"> <li>• Source: Fraser Index (1995 – 2003)</li> <li>• Rating of independence of judiciary</li> </ul> </li> </ul>

Executive Constraints (Polity IV)	<ul style="list-style-type: none"> <li>▪ Source: University of Maryland Polity IV Project, Political Regime Characteristics and Transitions, average of data from 1990-2003.</li> <li>▪ It refers to the extent of institutionalized constraints on the decision-making powers of chief executives, whether individuals or collectivities. The concern is therefore with the checks and balances between the various parts of the decision-making process. A seven-category scale is used. <ul style="list-style-type: none"> <li>• (1) Unlimited Authority, (3) Slight to Moderate Limitation on Executive Authority, (5) Substantial Limitations on Executive Authority, (7) Executive Parity or Subordination</li> <li>• Those polities described with a (3) or above also contain an independent judiciary</li> </ul> </li> </ul>
POLCONV	<ul style="list-style-type: none"> <li>▪ Source: Henisz Dataset</li> <li>▪ POLCONV variable, which takes the average of country data from 1990 to 2004. Data ranges from 0-1. Was rescaled to 0-6</li> <li>▪ This measure of political constraints estimates the feasibility of policy change (the extent to which a change in the preferences of any one actor may lead to a change in government policy). It is constructed by identifying the number of independent branches of government with veto power over policy change and is then modified to take into account the extent of alignment across branches of government using data on the party composition of the executive and legislative branches.</li> </ul>
Checks	<ul style="list-style-type: none"> <li>▪ Source: Database of Political Institutions, 1980/1990-2004.</li> <li>▪ It is constructed in the following way: <ul style="list-style-type: none"> <li>• Equals one in countries where legislatures are not competitively elected, considered countries where only the executive wields a check.</li> <li>• Incremented by one if there is a chief executive (it is blank or NA if not). Incremented by one if the chief executive is competitively elected</li> <li>• Incremented by one if the opposition controls the legislature.</li> <li>• In presidential systems, CHECKS is incremented by one for each chamber of the legislature unless the president's party has a majority in the lower house and a closed list system is in effect (implying stronger presidential control of his/her party, and therefore of the legislature). for each party coded as allied with the president's party and which has an ideological (left-right-center) orientation closer to that of the main opposition party than to that of the president's party.</li> <li>• In parliamentary systems, CHECKS is incremented by one for every party in the government coalition as long as the parties are needed to maintain a majority for every party in the government coalition that has a position on economic issues (right-left-center) closer to the largest opposition party than to the party of the executive. In parliamentary systems, the prime minister's party is not counted as a check if there is a closed rule in place – the prime minister is presumed in this case to control the party fully.</li> </ul> </li> </ul>

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