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Working Paper

Political institutions, intertemporal cooperation, and the quality of policies

Working Paper, No. 676

Provided in Cooperation with:

Inter-American Development Bank (IDB), Washington, DC

Suggested Citation: Scartascini, Carlos; Stein, Ernesto; Tommasi, Mariano (2009) : Political institutions, intertemporal cooperation, and the quality of policies, Working Paper, No. 676, Inter-American Development Bank, Research Department, Washington, DC

This Version is available at:

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*INTER-AMERICAN DEVELOPMENT BANK
BANCO INTERAMERICANO DE DESARROLLO (BID)
RESEARCH DEPARTMENT
DEPARTAMENTO DE INVESTIGACIÓN
WORKING PAPER #676
RG-N3336*

POLITICAL INSTITUTIONS, INTERTEMPORAL COOPERATION, AND THE QUALITY OF POLICIES

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APRIL 2009

**Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library**

Scartascini, Carlos G., 1971-

Political institutions, intertemporal cooperation, and the quality of policies / by Carlos Scartascini, Ernesto Stein, Mariano Tommasi.

p. cm. (Research Department Working Papers ; 676)
Includes bibliographical references.
"RG-N3336"

1. Social sciences and state. I. Stein, Ernesto. II. Tommasi, Mariano, 1964-. III. Inter-American Development Bank. Research Dept. IV. Title. V. Series.

HN18 .S438 2009
361.61 S438 -----dc22

©2009

Inter-American Development Bank
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Washington, DC 20577

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Abstract¹

While economists have tended to focus on specific public policies when developing recommendations, the achievement of welfare objectives might depend more on the quality of policies than their content. This paper develops several measures of the qualities of policies across countries, arguing that the quality of public policies depends on each polity's ability to strike intertemporal transactions necessary to develop and sustain effective policies. The analytical framework developed here indicates that this ability depends on several characteristics of political institutions, such as congressional capabilities, judicial independence, and bureaucratic independence and professionalism. The empirical evidence presented supports this idea. The measures of policy quality developed here could be utilized for other purposes, including the determination of conditions under which more public spending in a given area is likely to generate the desired outcomes.

Keywords: Political institutions, Public policies, Government capabilities, Intertemporal cooperation, Development, Policy index, Credibility, Judicial independence, Party institutionalization, Congress capabilities, Cabinet stability.

JEL Classification: D72, D78, H10, H50, O10

¹ We are particularly grateful to Fabiana Machado for her superb assistance in the development of this document and research agenda, and to discussants and participants at the Public Choice Society Meetings 2009.

1. Introduction

In every state, big or small, new or old, public policies play a fundamental role in influencing economic and social outcomes. In studying the effects of policies on various outcomes of interest, analysts have paid particular attention to the specific content of those policies. Countless overarching prescriptions were generated and also modified over the years according to the conventional wisdom of the time. For example, Latin America has gone through successive policy paradigms in the belief that once the “right” policies are implemented, things will work well. These waves have shifted from State-run inward-looking development in the postwar era to the macroeconomic discipline and trade liberalization of the Washington Consensus of the 1990s. While enthusiasm for the latter has waned, many observers and actors have started to search for (or to prematurely proclaim) a new paradigm.

Some economists’ beliefs notwithstanding, a universal set of “right” policies does not necessarily exist. Policies are contingent responses to underlying states of the world. What might work at one point in time in a given country might not work in a different place or in the same place at another time. In some cases, some characteristics of policies (or the details of their implementation) might matter as much as the grand title of the policy. For instance, Dani Rodrik analyzed six countries that implemented a set of policies that shared the same generic title—“export subsidization”—but had widely different degrees of success (Rodrik, 1995). Rodrik relates their success to such features as the consistency with which the policy was implemented, which office was in charge, how the policy was bundled (or not) with other policy objectives, and how predictable the future of the policy was.

The literature on macroeconomic policy offers many such examples, with emphasis on the effects of credibility and flexibility on policy success. The former has been widely recognized in recent work not only on macroeconomics, but also on trade policy, regulation, and other policy areas.² The effects of policies on the final economic and social outcomes of interest depends on the actions and reactions of economic and social agents, who take into account their expectations about the future of the policies in question before deciding their responses. As Rodrik explains, in reference to trade reform, “it is not trade liberalization per se, but *credible* trade liberalization that is the source of efficiency benefits. The predictability

² See, for example, Barro and Gordon (1983), Calvo (1996, Section V), Drazen (2000, Section II), Levy and Spiller (1994), and Rodrik (1989).

of the incentives created by a trade regime, or lack thereof, is generally of much greater importance than the *structure* of these incentives. In other words, a distorted, but *stable* set of incentives does much less damage to economic performance than an uncertain and unstable set of incentives generated by a process of trade reform lacking credibility.”³

Engerman and Sokoloff (2008) take this argument further by adding to the role of credibility that of policy flexibility in explaining growth: “*Credible* commitment to acknowledge private property rights, whether in the interests of the elite or the majority of the population, is the classic example of the value of certainty about policy action. More generally, however, allowing some *flexibility* in institutions, such that they can be altered to allow private or public agents to take fuller advantage of new opportunities that arise as technology or the environment changes, would be expected to foster improved economic performance and more rapid growth.”⁴

The examples above help motivate this project’s efforts to build measures of certain characteristics or key features of public policy beyond their specific content (e.g., whether some particular taxes are high or low), which may affect countries’ ability to reach desirable outcomes.

Concern with such policy characteristics leads us to focus on the processes that shape policies, carry them forward to implementation, and sustain or adapt them over time. Taking any particular “policy reform” to fruition is a process that involves multiple actors through many stages of the policy process. It requires specific responses from economic and social agents and therefore necessitates several forms of cooperation and positive beliefs about the durability and other properties of the policy. Governments need the ability to formulate and carry out policies, and the capacity to maintain momentum throughout the whole process. Many such “state capabilities” have been referred to in previous literature as key factors in explaining the impact of policies on desired outcomes. In a landmark study, Weaver and Rockman (1993) argue that governmental effectiveness can be measured according to several standards; the one they propose focuses on a set of tasks and on capabilities that governments need, regardless of their specific policy objectives, in order to perform those tasks (Weaver and Rockman, 1993, p. 6). Capabilities are a pattern of government influence on its

³ Rodrik (1989, p. 2). For models formalizing the effects of policies of uncertain duration in several economic contexts, see Calvo (1996, Section V) and Calvo and Drazen (1998).

⁴ Italics added for emphasis

environment that produces substantially similar outcomes across time and policy areas. Weaver and Rockman propose a number of government capabilities, including *setting and maintaining priorities*, *targeting resources*, *innovating when old policies have failed*, *coordinating conflicting objectives*, *ensuring effective implementation*, and *ensuring policy stability* so that policies have time to work.

In this paper we propose an explanation of such capabilities based on a framework of intertemporal cooperation. The framework (developed in Section 2) indicates that policies with good characteristics such as stability, adaptability and coherence are likely to emerge when policymaking actors can make and sustain agreements over time. In turn, the capacity to achieve such cooperative agreements (cooperative equilibria to repeated policymaking games) depends on some characteristics of the institutions of policymaking, including the policymaking capabilities of congress, judicial independence, party system institutionalization, and the like.

In the next section, we present the framework that guides both the construction of the variables and the empirical exercises. Section 3 introduces a number of variables that capture various qualities of public policies. Section 4 introduces a number of variables that, according to our framework, capture aspects of the workings of institutions relevant to explain the quality of policies. Section 5 presents the empirical results, which show that institutional variables likely to induce intertemporal cooperation matter for explaining good policy outcomes. Section 6 concludes and suggests various applications of the measures of policy quality developed in the paper.

2. The Framework⁵

The process of policymaking in modern-day democracies can be understood as a process of bargains and exchanges (or transactions) among various political actors. Some of these exchanges are consummated instantly (spot transactions), while in many other cases current actions or resources are exchanged for promises of future actions or resources (intertemporal transactions). Issues of credibility and the capacity to enforce political and policy agreements are crucial for political actors to be able to engage in intertemporal transactions.

⁵ This framework is presented in more detail in Spiller, Stein and Tommasi (2003) and Chapter 2 of Spiller and Tommasi (2007), building upon previous contributions such as Alesina (1988), Dixit, Grossman and Gul (2000), Dixit (2003), and de Figueiredo (2002).

The framework suggested here is an elaboration of previous work on transaction cost economics and its application to politics.⁶ A number of features, amenable to analysis from a transaction cost perspective, characterize the political transactions surrounding public policies. We mention six that are captured in a stylized manner by our framework:

- (1) Politics and policymaking take place over time. Decisions are made at different points in time, often by different configuration of actors, and decisions made at any point in time have both short-term and long-term consequences.
- (2) The relative political power of various actors changes over time.
- (3) There are elements of both conflict and commonality of interests in almost any relevant policy issue.
- (4) The socioeconomic reality on which policies operate changes over time. Random events require policy adaptation. New circumstances in international markets, policy decisions in other countries, technological changes, diseases, natural disasters, and social and demographic changes usually require new policies or adjustment of previous ones.
- (5) Most policies could be characterized by two decision frequencies: moments of major institutional definition (“contractual moments”) and regular policymaking under those rules.
- (6) Many of the changing realities in (4) are such that it would be impossible for political or policy agreements to cover every feasible future circumstance. Thus political contracts (5) are necessarily incomplete.

In order to capture those features, we depict policymaking as the outcome of a repeated game (a simple example of which is formalized in the Appendix).⁷ Imagine a number of political actors who have to make some collective decision. These players have a common interest in having the policy respond to an *economic or technological shock*. At the same time, the heterogeneity of preferences and/or distributive nature of politics generate

⁶ North (1990) and Dixit (1996) have labeled *transaction cost* politics the use of transaction-cost reasoning to think about politics. Related work in political science has been pioneered by Weingast and Marshall (1998), Moe (1990), Epstein and O’Halloran (1999), and Huber and Shipan (2002).

⁷ The model is more fully developed in Spiller and Tommasi (2007, Chapter 2).

conflict. The relative power of different players in the collective decision process changes over time, according to a *political random shock*. (Imagine some variation of a random recognition rule *a la* Baron and Ferejohn, 1989).

Assume that the political game starts with an initial period, before the play of the repeated game, in which players can make some agreements by unanimity. This captures the notion of a “contracting moment,” a time when the parties possibly agree on some restrictions on the future play of the game. The set of feasible contracts at that moment will depend on a number of things, including the availability of enforcement technologies—for instance, whether there is an independent judiciary.

Define first best policies as those that would be agreed upon in a complete contract before the world starts running—or equivalently, those that a benevolent social planner would choose. It is easy to show (see Appendix) that these optimal policies will be “moderate” and invariant to the realization of political shocks,⁸ but flexible enough to adjust to economic shocks. It is also easy to see that if political actors are durable and patient enough, they can sustain first-best policies as a Nash equilibrium in an infinitely repeated game.⁹

On the other hand, if their discount rate is high enough, (full) cooperation will not be sustainable in equilibrium. In non-cooperative equilibria, such as the infinite repetition of the unique Nash equilibrium of the one-shot game, each party that has political power at a given point in time will maximize its own welfare without any intertemporal considerations for those holding power in the past or in the future. In such a case, policies will depend on the realization of political shocks, and welfare will be lower than in the cooperative case.

Looking into the prior contracting stage in which players can make some agreements, restrictions on the set of feasible (i.e., enforceable) contracts will depend on the issues in question and on available enforcement mechanisms. Suppose, for instance, that agreements can be enforced by third parties, but that the realization of economic shocks is not verifiable. In that case, it will not be possible to enforce agreements that prescribe (economic) state-contingent rules. Simple rules, however, can be agreed upon. These rules would imply relatively inflexible policies. Since *ex-ante* parties prefer policies that are independent of

⁸ That is, first best policies will not depend so much on the identity of the each period’s agenda setter in Baron and Ferejohn (1989) or of the party in power in Alesina (1988). This is the *policy* equivalent of results on the stability of the *polity* in works such as Przeworski (2005) or Wantchekon (2000).

⁹ As discussed later, the possibility of sustaining cooperation will depend on a number of factors beyond the discount rate.

political shocks, these simple rules will not be sensitive to those shocks (which is good). On the other hand, since economic shocks are not verifiable, policies will not be able to adjust to the changing economic environment either (which is bad). The best *ex-ante* policies, then, may be rigid policies. As a consequence, they deliver lower welfare levels than could be obtained in a fully cooperative equilibrium or in an environment of complete enforcement.

Indeed, whenever the repeated game delivers full cooperation, these simple rigid rules will not be utilized—players will prefer adaptation to economic shocks to a set of rigid *ex-ante* rules. When the repeated game does not develop cooperation, though, there are conditions under which an inflexible policy rule will be chosen over the discretionary policy of the Nash equilibrium. That choice depends on the relative cost of not being able to adjust policies to economic shocks (related to the variance of the economic shocks), compared to the cost of “partisan” policymaking (related to the heterogeneity of preferences).¹⁰ Thus, when enforcement of intertemporal political exchanges is relatively weak, we may observe highly volatile political agreements or highly inflexible policies. (As argued in Spiller and Tommasi 2007, Argentina is a clear example of a country with non-cooperative policymaking leading to volatile policies occasionally curtailed by very rigid credibility-enhancing mechanisms, such as the monetary Convertibility regime).

We can obtain a further connection between the degree of cooperation in equilibrium and various features of public policy by expanding the model in a couple of directions. Two natural extensions consist of: (i) adding intertemporal policy linkages, and (ii) introducing individual policy actions (by different layers of government in a federal hierarchy, by different horizontal units such as ministries in a given level, by multiple actors throughout the policy process, etc.).

Many policies are linked over time (i). Those linkages could arise because of technical reasons (i.e., policies that have intertemporal effects), legal reasons (a law is in place until it is changed), or economic reasons (present fiscal actions have future effects through intertemporal budget constraints). Introducing such linkages, Spiller and Tommasi (2007) show that in bad transaction environments, some welfare-improving policies (or policy

¹⁰ See the Appendix. Notice that this result is similar to the standard rules vs. discretion result in monetary policy. See for instance Persson and Tabellini (2000), Chapter 17.

reforms) are not undertaken, and that there is under-investment in policymaking capacities.¹¹ The former result obtains due to an inability to instrument the intertemporal compensations necessary to improve the welfare of all veto players. The latter is just the “policy” analogue of the well-known result in transaction cost economics that *ex-post* opportunism reduces *ex-ante* investment.

Another easy extension of the model (ii) introduces individual policy actions other than participation in the “collective” choice discussed above. Imagine, for instance, the multiple policy authorities in a federal system, or the various ministries in charge of the implementation of different policies (and the constituencies or iron triangles behind them). Those actions could be more or less cooperative. In bad transaction environments, those individual policy actions will be less cooperative (a basic result from non-cooperative game theory), leading to poorly coordinated (or “balkanized”) policies.

To summarize, we have argued that in less-cooperative policymaking environments policies might be too volatile and/or too rigid, poorly coordinated, and in general of low quality due to insufficient investment. These properties of policies are among the dependent variables we explore in Section 3. After doing that, in Section 4 we come back to discuss, on the basis of the framework just presented, the type of institutional variables that will constitute our explanatory variables.

3. Characteristics of Public Policies

The framework just presented generates specific predictions about some policy characteristics. That logic has guided our data generating efforts. Since most policies are not one-shot decisions independent of past and future policy decisions, policy characteristics will depend on the ability of the polities to reach certain intertemporal agreements which would allow making decisions today that are consistent over time. As in transaction cost economics poor transaction environments lead to less investment than better ones, in our framework poor transaction environments would favor policies that are too volatile (they will change too often in response to political winds); too rigid (often incapable of adjusting in the face of changed circumstances, such as economic shocks); and poorly coordinated or incoherent. Also, polities

¹¹ By investment in policy-making capacities we refer to things such as developing a competent bureaucracy, or legislators investing in acquiring policy expertise. This is consistent with results in Besley and Persson (2007).

afflicted by bad transaction environments will invest insufficiently in capacities and thereby produce low-quality policies.

Following that logic we have selected the following six indicators of a country's policy characteristics: stability, adaptability, coherence and coordination, implementation and enforcement, efficiency, and public-regardedness.

Policy Stability: Some countries seem capable of sustaining most policies over time. In other countries, policies are frequently reversed, often at each minor change of political winds (whether a change in administration or a change in some key cabinet member or senior bureaucrat). Having stable policies does not mean that policies cannot change at all, but rather that changes tend to respond to changing economic conditions or to failure of previous policies, rather than to flimsy political winds. In countries with stable policies, changes tend to be incremental, building upon achievements of previous administrations, and tend to be achieved through consensus. In contrast, volatile policy environments are characterized by large swings and by lack of consultation with different groups in society.

Policy Adaptability: It is desirable for countries to be able to adapt policies to changing economic conditions and to change policies when they are clearly failing. Policy adaptability can be hindered either by a policy making process prone to gridlock, or by rigidities introduced explicitly to avoid opportunistic manipulation of policy. In some polities, the configuration of the political system can lead to gridlock, making it difficult to achieve change. In other cases, the government of the day might be prone to abuse discretion by adopting opportunistic one-sided policies. In order to limit that opportunism, such polities might resort to fixed policy rules that are difficult to change.¹² This, of course, would limit policy volatility, but at the cost of reducing adaptability. Generated by either gridlock or built-in rigidities, low policy adaptability leads to the inability to respond to shocks adequately, and a propensity to keep sub-optimal policies for extended periods of time.

Policy Coordination and Coherence: Public policies are the outcome of actions taken by multiple actors in the policymaking process. Ideally, different agents acting in the same policy domain should coordinate their actions to produce coherent policies. However,

¹² This is sometimes accomplished by embedding policies (such as pension benefits in Brazil or intergovernmental transfers in Argentina) into the constitution.

this does not always occur. In some countries, policymaking on certain issues involves a large number of actors that do not communicate adequately with each other, leading to what Cox and McCubbins (2001) have called “balkanization” of public policies. Lack of coordination often reflects the non-cooperative nature of political interactions. It may occur among different agencies within the central government, between agencies in the central government and others at the regional or municipal level, or even among agents that operate in different stages of the policymaking process—different interest groups with differential access to the Executive, Legislature, bureaucracy, or Judiciary, will exercise their pressure at the stage which is most favorable to them.

Policy Implementation and Enforcement: A policy could be well thought out and pass through the appropriate legislative debate, and yet be completely ineffective if it is not well implemented and enforced. In many countries, the quality of policy implementation and enforcement is quite poor. This is associated in part with the lack of capable and independent bureaucracies, as well as the lack of strong judiciaries. To an important degree, the quality of policy implementation and enforcement in a given country will depend on the extent to which policymakers in that country have incentives and resources to invest in such policy capabilities.

Policy Efficiency: Whatever policy direction a government decides to follow (redistribute to the poor, clean the environment, promote non-traditional exports), it can do so with varying degrees of efficiency—that is, by making better or worse use of its human and economic resources. Efficient policies imply, for example, that public spending is not wasteful. Efficient policies might not necessarily be public-regarded (the government could be very efficient in targeting a very small subset of the population).

Public-Regardedness of Policies: Public-regardedness refers to the extent to which policies produced by a given system promote the general welfare and resemble public goods (that is, are “public-regarding”) or tend to funnel private benefits to certain individuals, factions, or regions (Cox and McCubbins, 2001).

4. Political Institutions and Intertemporal Cooperation

We argued in Section 2 that the ability of political actors to cooperate will be an important determinant of the characteristics of policies in each country—characteristics such as those presented in Section 3. The next question, then, is what conditions make policy cooperation more likely.

It has already been established that the likelihood of political cooperation depends on the patience of the players (i.e., on their discount factor). The repeated-game approach sketched above and exemplified in the Appendix could be utilized to investigate various other elements of the description of the game that could facilitate (or hinder) the enforcement of cooperative play. We list here some factors that affect the degree of cooperation in equilibrium outcomes, drawing insights from the theory of repeated games.¹³

Number of Political Players

The larger the number of players, the smaller the set of other parameters for which cooperation obtains. Fudenberg and Tirole (1991: Section 5.1.2) and Fudenberg and Maskin (1986) show that, holding constant the set of feasible payoffs, increasing the number of players reduces the set of equilibria towards less cooperative ones.

Intertemporal Linkages among Key Political Actors

The intertemporal pattern of interactions among specific individuals in formal political positions (such as legislators, governors, and bureaucrats) matters for developing cooperative outcomes. It is not the same to have a legislature in which the same individuals interact over extended periods of time as to have a legislature where individuals are drawn at random from given populations (parties, provinces, etc.) with frequent replacement. Cooperation is less likely in the latter. (Also, historical events, such as past democratic history can leave a legacy of short-termism, as argued in Dominguez and Lowenthal, 1996.)

Delegation

Other than self-enforcement through repeated play, certain forms of cooperation could be achieved by alternative institutional means. Delegating policy to an independent bureaucracy

¹³ See for instance, Green and Porter (1984), Rotemberg and Saloner (1986), Fudenberg and Tirole (1991: Chapter 5), and Mailath and Samuelson (2006). Dixit (1996: 71) presents a similar listing.

is one such alternative. In the example of the Appendix, it is easy to show that delegating policy forever to an individual with preferences falling in between those of the two parties leads to the first best. More generally, delegation has its problems, but there will be cases in which the cost of those problems is smaller than the cost of “partisan” policymaking.

Availability of Enforcement Technologies

As in transaction cost economics, intertemporal cooperation is easier to achieve if there is good third-party enforcement. The presence and characteristics of a potentially impartial umpire and enforcer of political agreements, such as an independent judiciary, will vary from country to country, providing variance in the degree of enforcement of intertemporal political cooperation.

Characteristics of the Arenas Where Key Political Actors Undertake Their Exchanges

The complex intertemporal exchanges required for the implementation of effective public policies could be facilitated by the existence of exchange arenas that are organized in ways that make cooperation easier to enforce. Seminal work on the U.S. Congress debates the role that different institutional arrangements have in facilitating legislative bargaining, but it is agreed that *somehow* things are arranged in a way that facilitates some intertemporal cooperation in political exchanges (see for instance Weingast and Marshall, 1988; Shepsle and Bonchek, 1997; and the collection in Shepsle and Weingast, 1995). Whether the legislature as the arena where these transactions take place is adequately institutionalized depends on several factors, including legislators’ incentives and capabilities.

To sum up, political cooperation leading to effective public policies is more likely if: (1) the number of political actors is small, (2) those actors have long horizons and/or strong intertemporal linkages, (3) good delegation technologies are available, (4) good enforcement technologies (such as a strong court to arbitrate) are available, and (5) the key political exchanges take place in arenas where properties (1)-(4) tend to be satisfied.

What are the actual political institutions or characteristics of political institutions that make political cooperation (and hence good public policies) more or less likely? The theoretical elements of the description of the game listed above could be mapped to observable features of the policymaking environment. Here we concentrate on a few such features which seem to capture some of the determinants of political cooperation and (as

shown in the next section) for which there are proxy variables available in international datasets with wide enough country coverage. These characteristics are the following:

Congressional Policymaking Capabilities: Congress is the democratic arena par excellence for the bargaining and (hopefully) enforcing of intertemporal policy agreements. Legislatures are critical to the functioning of democracy and act as an important arena for discussing and negotiating policy. A legislature made of up professional legislators (with technical capabilities for discussing and overseeing policies) and adequate organizational structures can facilitate the development of relatively consensual and consistent policies over time. From applied analysis of Latin American policymaking (reflected in Stein et al., 2008 and in Saiegh, 2009) we have identified a number of organizational characteristics of legislatures and personal characteristics of legislators that correlate with the strength of legislatures in the policymaking process. Those measures, in turn, correlate well with some variables available for a large sample of countries, capturing opinion about the effectiveness of lawmaking bodies and confidence in Parliament, variables that we use in the empirical implementation of the next section.

Judicial Independence: As stated above, the Judiciary, especially the Supreme Court or Constitutional Tribunal is a natural candidate for the enforcement of those political or policy agreements reflected in constitutions and laws. In its role as an independent referee, the judiciary can provide a “durability mechanism” that can increase the probability of reaching intertemporal agreements.¹⁴ A judiciary that effectively plays its role may contribute to better public policy outcomes, such as enhanced policy stability, and policy implementation and enforcement. If the judiciary is not independent of the other branches of government, it may not be effective in fulfilling that role.

Civil Service Capacity: A strong, independent and professional bureaucracy seems the most natural vehicle for the flexible enforcement of political agreements via delegation. An effective and capable bureaucracy is likely to improve the quality of implementation of public policies, as well as their coordination across ministries. The competence and independence of the bureaucracy may decrease the likelihood that policy will be prone to

¹⁴ This view follows the work first discussed by Landes and Posner (1975) in which the presence of an independent court tends to resolve time-inconsistency problems (that is, agreements made today have a higher discounted value because they are less likely to be changed in the future). See also Crain and Tollison (1979) and Crain (2001). The role of intertemporal *political* enforcement is explored, in the context of Latin American judiciaries, in Souza (2009).

politicization and political opportunism, and could increase policy adaptability to changing circumstances by relying on technical expertise (Zuwanic and Iacoviello, 2009).

Party System Institutionalization: An institutionalized party system is a natural aggregator that reduces the effective number of players at the bargaining table and increases the horizons of individual political actors. The structure and organization of political parties and party systems can have an important influence on the policymaking process, both by playing a direct role and through interactions with other institutions. Political parties can influence policy debates, affect executive-legislative relations, enhance or constrict the possibilities for coordination in congress, or manage the incentives of politicians at both the national and local level. In sum, institutionalized party systems serve as facilitators of intertemporal policy compromise.¹⁵

Cabinet Stability: Cabinet ministers in many countries play key roles in various stages of the policy process. The strength and organizational abilities of cabinets can have important effects on the outcomes of public policy. For example, a certain degree of cabinet stability is likely to be necessary to promote longer-term policies and allow ministers to see programs and policy implementation through to completion. Frequent turnover of cabinet ministers may foster the short-term orientation of policy and frequent policy changes, as well as a reduction in the effective coordination between the ministers and the bureaucratic institutions they may oversee (Martínez-Gallardo, 2009).¹⁶

5. Empirical Analysis

5.1 Policy Characteristics across Countries

In this paper we attempt to build cross-country indicators of policy capabilities drawing from available broad cross-national sources. The construction of this international dataset builds upon a previous and more in-depth dataset (presented in Inter-American Development Bank, 2005) in which these policy characteristics were constructed for 18 Latin American countries combining international sources and our own survey of experts, double-checking with specific

¹⁵ In previous work within Latin America we have found that institutionalized party systems, if programmatic, tend to correlate with high-quality policies (Stein and Tommasi, 2007). See also Jones (2009), Mainwaring and Torcal (2005), and Mainwaring and Scully (1995).

¹⁶ There are other variables, such as the legislative reelection rate, that proxy very well some of the features of cooperation (for example, it is probably the best measure for approaching the horizon of legislators and the existence of intertemporal linkages) and we would have liked to include in the analysis. Unfortunately, there is no widely available cross-country data on legislative reelection rates.

studies of various countries (Stein et al., 2008) and policy areas (taxation, regulation, education, social policy). The dataset we present in this paper is an extension of the international components of the previous Latin American dataset. The indexes presented here have a high level of correlation with the other components of the Latin American indexes for those 18 countries. Most of the information presented here comes from qualitative surveys which we have complemented and double-checked with more objective data whenever possible.¹⁷ For brevity, we don't describe the data sources in this document. For complete references, links and documentation see Berkman et al. (2009).

The policy characteristics were constructed as follows:

Policy Stability: To gauge policy stability we used four variables from three different sources. The first is the standard deviation of the detrended Fraser Index of Economic Freedom for the years 1999 to 2004. Two of the variables come from the Global Competitiveness Report (GCR) of 2002. One measures whether legal or political changes over the past five years have undermined respondent firms' planning capacity, and the other measures whether new governments honor the contractual commitments and obligations of their predecessors. Finally we used a question from Profils Institutionnels (PI) where experts evaluate the "Consistency and continuity of government action in economic matters."

Policy Adaptability: Our measure of policy adaptability was constructed based on four variables from three different sources. Two variables come from the Columbia University State Capacity Survey (CUSCS). In the first question, experts (from academia, government and media) rate states' ability to respond effectively to domestic economic problems, and in the second they rate states' ability to formulate and implement national policy initiatives. A third variable is drawn from the Bertelsmann Transformation Index (BTI) for 2006 measuring the degree of adaptability based on 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. Finally, we used the Profils Institutionnels item where

¹⁷ For instance, we have cross-checked the correlation of our measures of some of these policy characteristics with indicators based on more objective (say, fiscal) data, which are in some cases available for (much) smaller samples of countries. (See the next footnote for some examples). In order to verify that the data we collected were reliable we ran a number of checks to examine whether we were measuring the desired components of public policies and institutions. These exercises are reported in the working paper Scartascini, Stein, and Tommasi (2008b).

experts evaluate the decision-making capacity of political authorities in economic matters (responsibility, rapidity, etc).¹⁸

Policy Coordination and Coherence: Our measure of coordination and coherence was built based on two variables, one from the Columbia University State Capacity Survey and the other from the Profils Institutionnels database. The first is a rating of the effectiveness of coordination between the central government and local-level government organizations. The second rates co-ordination between ministries and within administrations.

Policy Implementation and Enforcement: This index is based on the following six variables. Expert evaluation of whether the minimum wage set by law in the country is enforced, expert evaluation of whether tax evasion in the country is rampant or minimal, and expert evaluation of whether environmental regulation in the country is enforced, all from the GCR. We draw from the BTI analysts' estimate of whether the government implements its reform policy effectively, and we draw from the CUSCS a rating of states' ability to formulate and implement national policy initiatives and a rating of states' effectiveness in collecting taxes or other forms of government revenue.

Policy Efficiency: To capture efficiency we employed three measures. From the GCR we used the expert ratings of the composition of Public Spending and whether it is wasteful. From the BTI we employed experts' evaluation of whether the government makes efficient use of available economic and human resources. Finally, from the Economist Intelligence Unit (EIU) we used the experts' assessment of the effectiveness of the political system in formulating and executing policy.

Public-Regardedness of Policies: The public-regardedness index is captured by three variables. The GCR's expert rating of whether when deciding upon policies and contracts, government officials usually favor well-connected firms and individuals or are neutral among firms and individuals. Also from GCR we use the experts' evaluation of whether government social transfers go primarily to poor people or to the rich. Finally, we include the Transparency International Corruption Perceptions Index (2005).

¹⁸ One of the double checks we did was to verify that our index of adaptability correlates well with indicators of whether social policy adjusts well over the macroeconomic cycle, for those countries for which we had such measures; see Braun and Di Gresia (2002). Similar checks with fiscal variables and variables related to education policy were performed in Diaz et al. (2009).

The Policy Index: The various indexes we have constructed to measure these key features could be combined in different ways to come up with an overall index of the quality of public policies, which should provide a good picture of the quality of policymaking in many countries. Because we do not have a prior regarding which index should be weighted most heavily, in constructing a policy index for this study we allocated the same weight to each of the features discussed above and use the simple average of the different policy characteristics.¹⁹

All the variables we constructed are available in an accompanying dataset (Berkman et al., 2009). Most of the variables are positively correlated, suggesting that to a great extent all good things tend to go together. In Scartascini, Stein, and Tommasi (2008b) we argue that each one of them measures a substantively different concept and different policy dimensions are indeed being captured by the measures introduced here.²⁰ We also show in that working paper that these policy features are associated with relevant development outcomes such as GDP per capita growth and change in the UNDP Human Development Index.

As indicated in Table 1, countries tend to rank as expected in these policy characteristics (e.g., the developed on top and Sub-Saharan Africa at the bottom). The developed countries (including Western Europe, Japan, Australia, the United States, and Canada) rank the highest in terms of the policy index and are considerably higher on average than those of the rest of the world. The second highest ranking is that of the countries of East Asia and the Pacific, which includes the economically successful countries of Singapore, Taiwan, Thailand, and China. Following third and fourth are those of the Middle East/North Africa and Eastern Europe/Central Asia, while Latin American and Caribbean (LAC) countries fall to fifth on the scale. The only regions surpassed by LAC are Sub-Saharan Africa and South Asia. The fact that the indicators of policy quality are related to the level of development is controlled for in the empirical analysis of Section 5.3.

¹⁹ We have explored various weighting alternatives, even using a policy index including only on the first four of these policy characteristics, which come out more directly from the framework of Section 2. The empirical results are roughly the same for all such exercises.

²⁰ We have taken great care in ensuring that what we have is not just an optimism/pessimism bias driven by third factors. One of the reasons for our confidence is that the different components of the indexes come from different sources and have been averaged (when possible) over long periods of time.

Table 1. Average Policy Characteristics per Region

| Region | Stability | Adaptability | Implementation | Coordination | Efficiency | Public Regardedness | Policy Index |
|----------------------------|-----------|--------------|----------------|--------------|------------|---------------------|--------------|
| Developed Countries | 3.39 | 2.80 | 3.01 | 2.88 | 2.44 | 2.97 | 2.96 |
| East Asia/Pacific | 2.74 | 1.79 | 2.10 | 1.84 | 1.81 | 1.61 | 1.97 |
| Middle East/North Africa | 2.62 | 1.37 | 1.93 | 1.69 | 1.55 | 1.79 | 1.82 |
| Easter Europe/Central Asia | 2.65 | 1.64 | 1.86 | 1.53 | 1.46 | 1.39 | 1.7 |
| Latin America/ Caribbean | 2.52 | 1.56 | 1.77 | 1.26 | 1.29 | 1.35 | 1.62 |
| South Asia | 2.83 | 1.44 | 1.49 | 1.19 | 1.32 | 1.16 | 1.53 |
| Sub-Saharan Africa | 2.58 | 1.21 | 1.76 | 1.11 | 1.29 | 1.32 | 1.53 |

Note: Regions ordered according to their standing in the Policy Index (which takes values between 1 and 4).

This distribution is similar when we look at individual policy features. However, changes in the rankings seem to suggest that even though all the variables tend to go together, the polities of some countries seem to be better able to deliver certain features of policies to the detriment of others. Indeed, as shown in Table 2, while in some features countries of a given region tend to be close to each other, in others the variance is relatively large. To give some examples, developed countries tend to receive relatively high scores on stability. If we run cluster analysis on the data we find that they tend to form a somewhat uniform group that stands out from countries in other regions (the variance is 0.03). However, if we apply the same procedure to coordination the picture is quite different (variance is 0.48). Countries like Italy, Israel and France tend to be closer to the success cases in the developing world (e.g. Botswana, Chile, Brazil, and Taiwan) rather than to the highest-ranking developed countries (e.g. Finland, Germany, Sweden, and Norway). Conversely, Singapore tends to cluster together with successful developed countries, rather than with its East Asian fellows, in features such as coordination and implementation and enforcement.

Table 2. Variance of Distances among Countries within Regions²¹

| Region | Stability | Adaptability | Implementation | Coordination | Efficiency | Public Regardedness | Policy Index |
|------------------------------|-------------|--------------|----------------|--------------|-------------|---------------------|--------------|
| Developed Countries | 0.03 | 0.21 | 0.2 | <u>0.48</u> | 0.14 | 0.2 | 0.13 |
| East Asia / Pacific | 0.1 | 0.4 | 0.32 | 0.51 | <u>0.63</u> | 0.48 | 0.27 |
| Easter Europe / Central Asia | 0.1 | <u>0.35</u> | 0.19 | 0.28 | 0.17 | 0.1 | 0.15 |
| Latin America/ Caribbean | 0.17 | 0.29 | 0.26 | 0.32 | <u>0.33</u> | 0.25 | 0.23 |
| Middle East/ North Africa | 0.08 | 0.25 | 0.13 | <u>0.36</u> | 0.2 | 0.1 | 0.13 |
| South Asia | 0.07 | <u>0.14</u> | 0.1 | 0.16 | 0.05 | 0.11 | 0.05 |
| Sub-Saharan Africa | 0.07 | 0.32 | 0.26 | <u>0.41</u> | 0.27 | 0.18 | 0.18 |

²¹ These variances are calculated based on the mean of Euclidean distances between each country of a given group and each of the other countries in that same group.

Again, these differences in clustering show that some countries seem to be better able to deliver certain features of policies to the detriment of others. For example, countries like Korea seem to have a high capacity to adapt their economic policies; however, they seem to be less able to do so in line with benefits for the overall population (public-regardedness). Comparatively, Finland seems to favor a wide range of the population with its policies; however, its capacity to adapt in the face of shocks seems to be relatively lower.

One of the concerns usually expressed by researchers is that, despite the multitude of measures of policy and institutional capacity available, they are all getting at the same abstract concept (Van de Walle, 2005; Knack and Manning, 2000). In this regard, the patterns discussed above seem to contribute to the validity of the measures proposed here to the extent that interesting and reasonable variations are observed when comparing country rankings on the different dimensions.

5.2 The Workings of Political Institutions

As we have argued above, the ability of countries to achieve good policy characteristics depends on the quality of its institutional environment and the ability of the actors in charge of policymaking to reach intertemporal agreements. In this paper, we proxy the conditions for cooperation with some characteristics of key players and arenas such as congress, the party system, the judiciary, and the bureaucracy, following the logic of Section 4.

Congressional Policymaking Capabilities: We used the average of two data sources: the effectiveness of lawmaking bodies (from the GCR) and the population's confidence in parliament (from the World Values Survey).²²

Judicial Independence: This variable has been constructed from three different sources—GCR, BTI, and the Fraser Index—that attempt to measure the same phenomenon: whether the judiciary is subject to interference by the government or other political actors.

Civil Service Capacity: This variable has been constructed using data from two sources—the State Capacity Survey and the International Country Risk Guide—and includes indexes that measure the degree of professionalism in the civil service, whether recruitment is

²² For this variable, as for most of the others, we have found a strong correlation within the Latin American subsample between these measures and more focused measures constructed for those 18 countries. Saiegh (2009) and Inter-American Development Bank (2005) show that these two measures correlate well with indicators of the duration of legislative careers, legislators' education, and the degree of specialization in congressional committees.

based on merit, the level of the bureaucracy's functional capacity and performance, and its efficiency.

Party System Institutionalization: The Party System Institutionalization Index is comprised of five variables, which measure the extent to which there is a stable, moderate and socially rooted party system that can articulate and aggregate societal interests (from the BTI); the level of confidence in political parties (from the World Values Survey and various Barometers); vote volatility; the age of parties; and the fairness of elections.

Cabinet Stability: Defined as the number of times in a year that a new premier is named and/or 50 percent of the cabinet posts are occupied by new ministers,²³ from the Cross National Time Series database.

Other Institutional Variables: The variables listed above are natural proxies for some facilitators of intertemporal cooperation. In our analysis we have included some of the institutional rules used more broadly in the literature on political institutions and policy, such as the political regime, the electoral system, and the effective number of parties in the legislature. These variables, which are widely used in the Political Economy literature (e.g., Persson and Tabellini, 2003) are not easily mapped directly into this project's motivating framework, and as will be shown below, they are usually not related to the policy variables.²⁴

5.3 Relating Political Institutions and Policy Outcomes

The framework used to construct these variables generates a number of predictions relating some institutional conditions likely to foster intertemporal cooperation to the features of policies captured by our policy indexes. As shown in Table 3 (each cell in the table shows the coefficient for the variable of interest taking the institutional variables one at a time and controlling for GDP per capita and regional dummies), our expectations are borne out by the data.²⁵ The "intertemporal" institutional variables are often positively and significantly

²³ We converted the original variable so higher numbers indicate higher stability.

²⁴ Scartascini (2007) develops the potential links between the institutional variables traditionally utilized in the literature and the features of cooperation. Gerring, Thacker, and Moreno (2005), another interesting inquiry into the role of alternative political institutions on some governance outcomes, shares the same broad set of concerns as this agenda. The authors propose a reduced-form characteristic of political systems called *centripetalism* as the most favorable to good governance. In their view, parliamentarism favors centripetalism, and hence good outcomes.

²⁵ Those countries defined as non democracies since 1990 are excluded from the empirical exercises. Democratic data are taken from Freedom House.

correlated with policy features. This suggests these desirable policy features might indeed be a consequence of good well-functioning policymaking institutions being in place.²⁶

**Table 3. Institutional Strengths and the Characteristics of Policies,
One Institutional Variable at a Time**

| Policy Characteristic | Stability | Adaptability | Implementation | Coordination | Efficiency | Public Regardedness | Policy Index |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Institutional Variable | | | | | | | |
| Congressional Policymaking Capabilities | 0.420*** (0.0948) | 0.465*** (0.141) | 0.478*** (0.117) | 0.439*** (0.149) | 0.570*** (0.111) | 0.508*** (0.111) | 0.514*** (0.0836) |
| Observations | 84 | 87 | 91 | 80 | 92 | 92 | 92 |
| R-squared | 0.671 | 0.613 | 0.693 | 0.704 | 0.652 | 0.802 | 0.826 |
| Party System Institutionalization | 0.142 (0.120) | 0.645*** (0.150) | 0.431*** (0.131) | 0.364** (0.175) | 0.184 (0.137) | 0.257** (0.125) | 0.337*** (0.102) |
| Observations | 89 | 92 | 96 | 84 | 96 | 95 | 97 |
| R-squared | 0.579 | 0.652 | 0.670 | 0.682 | 0.553 | 0.766 | 0.778 |
| Judicial Independence | 0.329*** (0.0600) | 0.361*** (0.0951) | 0.468*** (0.0697) | 0.384*** (0.102) | 0.324*** (0.0753) | 0.497*** (0.0660) | 0.426*** (0.0493) |
| Observations | 88 | 91 | 95 | 83 | 96 | 95 | 96 |
| R-squared | 0.692 | 0.636 | 0.755 | 0.727 | 0.623 | 0.851 | 0.865 |
| Civil Service Capacity | 0.245*** (0.0674) | 0.478*** (0.0878) | 0.464*** (0.0693) | 0.499*** (0.0920) | 0.257*** (0.0802) | 0.294*** (0.0807) | 0.388*** (0.0536) |
| Observations | 88 | 90 | 94 | 84 | 93 | 93 | 94 |
| R-squared | 0.635 | 0.687 | 0.757 | 0.758 | 0.594 | 0.787 | 0.845 |
| Cabinet Stability | 0.163 (0.185) | 0.380 (0.260) | 0.417* (0.222) | 0.812*** (0.257) | 0.458* (0.233) | 0.595*** (0.214) | 0.446*** (0.170) |
| Observations | 89 | 92 | 96 | 84 | 96 | 95 | 97 |
| R-squared | 0.576 | 0.586 | 0.644 | 0.703 | 0.562 | 0.775 | 0.769 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Controls included in the regressions are: Ln(GDPpc) in 1990 and 7 regional dummies

Similar results are obtained when we look at the multivariate interaction of these variables. We focus this brief analysis on the Policy Index.²⁷ Looking at the specifications in Table 4, where each includes a particular set of variables, we see that most of the institutional strength variables have a significant effect on the overall quality of policies. The exceptions are the measures of party institutionalization and cabinet stability, where we fail to reject the hypothesis that their effect is null for the policy index. They are significant, however, for some of the individual indexes. Plain institutional rules have no discernible effect either, and only the previously significant institutional quality variables remain positive and significantly associated with the Policy Index. For this analysis we use three variables:²⁸ Political Regime (whether the system is presidential or parliamentary), Proportional Electoral System, and the

²⁶ As shown below, when we look at basic institutional rules such as the electoral system or the government system we fail to observe significant effects (even if the institutional characteristics we have introduced are not included in the regressions).

²⁷ See Machado et al. (2009) for a more complete analysis, looking at each of the dependent variables in detail, contrasting the predictions of this framework with those of other approaches that speak to each of those issues.

²⁸ We have also found the same results with other variables such as bicameralism, and federalism, which we do not report here.

Effective Number of Parties, all of which come from the Database of Political Institutions.²⁹ Finally, we also include some economic controls related to exposure to economic volatility and shocks. Including these variables does not change the results.

Table 4. Institutional Strengths and the Characteristics of Policies, Multivariate Regression

| Dependent Variable | Policy Index | | | | | | |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Independent Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| Congressional Policymaking Capabilities | 0.175* (0.0883) | 0.170* (0.0899) | 0.155 (0.0942) | 0.222** (0.0942) | 0.186* (0.106) | 0.174* (0.0881) | 0.175* (0.0888) |
| Party System Institutionalization | 0.0405 (0.0910) | 0.0453 (0.0928) | 0.0383 (0.0926) | 0.0871 (0.106) | 0.0837 (0.110) | 0.0538 (0.0917) | 0.0369 (0.0925) |
| Judicial Independence | 0.267*** (0.0628) | 0.267*** (0.0632) | 0.275*** (0.0637) | 0.267*** (0.0642) | 0.279*** (0.0668) | 0.264*** (0.0628) | 0.265*** (0.0637) |
| Civil Service Capacity | 0.183*** (0.0570) | 0.180*** (0.0581) | 0.180*** (0.0576) | 0.154** (0.0603) | 0.145** (0.0628) | 0.196*** (0.0583) | 0.183*** (0.0574) |
| Cabinet Stability | 0.0423 (0.132) | 0.0362 (0.134) | 0.0195 (0.133) | -0.0512 (0.147) | -0.0509 (0.150) | 0.0423 (0.132) | 0.0444 (0.133) |
| Political Regime | | 0.0132 (0.0419) | | | 0.00194 (0.0445) | | |
| Proportional Electoral System | | | 0.00260 (0.0712) | | -0.0493 (0.0824) | | |
| Effective Number of Political Parties | | | | 0.0243 (0.0161) | 0.0258 (0.0166) | | |
| Volatility of GDP | | | | | | 0.0157 (0.0143) | |
| Volatility of Terms of Trade | | | | | | | -0.183 (0.660) |
| Observations | 90 | 90 | 89 | 78 | 77 | 90 | 90 |
| R-squared | 0.897 | 0.897 | 0.898 | 0.907 | 0.906 | 0.899 | 0.897 |

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1
Controls included in the regressions are: Ln(GDPpc) in 1990 and 7 regional dummies

The results are encouraging regarding the framework. In particular, the institutional variables related to intertemporal cooperation are significant in explaining the quality of policies, but the institutional variables traditionally used in the literature to explain economic outcomes seem not to matter that much, at least not directly. Adding variables that proxy the existence of “economic shocks,” such as the volatility of GDP and the volatility of terms of trade, does not alter the results significantly.

6. Conclusions

The paper has introduced a number of cross-national measures of various properties or qualities of public policies. We have shown that certain characteristics of the policymaking environment, which we have related to the capacity of generating intertemporal agreements, tend to generate better policy features. For example, we show that countries with higher

²⁹ We use the average from 1990 to 2004.

Congress capabilities, judicial independence, and bureaucratic quality tend to produce higher-quality policies.

While we believe these preliminary results are interesting in their own right, if for no other reason than to foster discussion on these subjects, we hope that the dataset itself will stimulate scholars to utilize it in their analysis of political institutions, public policies, and development outcomes.

The measures of policy characteristics that we have assembled can have uses beyond the one developed in this paper. We are pursuing two alternative uses of these variables. First, we use these variables to challenge some of the results of the veto player literature. One of the most prominent theoretical strands in comparative politics today is the veto player theory developed and summarized by Tsebelis (2002)—and applied to presidential democracies in Cox and McCubbins (2001). It is an approach that attempts to provide a synthetic characterization of political systems in terms of their impact on the ease or difficulty of implementing policy change, designating as veto players those political actors whose agreement is necessary to change policy. One of the main predictions of veto player theory is that polities with a higher number of veto players are less likely to change their policies. (This is good for sustaining policy commitments, but bad for adapting to changing circumstances or to policy failures.) Using the policy variables constructed in this paper, and the framework summarized in the previous section, Scartascini, Stein and Tommasi (2008) challenges this prediction from the veto player approach. We postulate that polities more able to sustain policies over time will not necessarily will be less able to adjust policies when necessary, and our separate notions of stability and adaptability attempt to capture these two distinct concepts. Furthermore, in our perspective, polities that are better able to cooperate over time might be able to achieve more of *both* desirable policy qualities in such a way that we could find these two variables positively correlated in a cross section of countries (as we indeed do). Furthermore, in that paper we find that a higher number of veto players indeed increases both stability and adaptability, and that both variables are better explained by institutional variables attempting to capture intertemporal cooperation than by variables that measure the number of veto players.

Second, we are also attempting to use these proxies for state capacity as control variables for explaining the impact of public spending on a number of social areas.

Preliminary results suggest that the policy environment does indeed matter. However, it also suggests that it matters differently depending on the issue at hand (in our example, education and health). We find that if a country's policy environment is bad, spending more on health has no clear effect on improving life expectancy. Conversely, as countries develop a good policy environment, they tend to benefit more from a given amount spent (the effect of health expenditures is positive and significant). With respect to education, both the general policy index and the public-regardedness of policies matter significantly, but countries displaying low-quality policies tend to benefit more from higher levels of spending. Those simple exercises suggest that the policy environment does indeed matter. However, they also suggest that the policy environment matters differently depending on the issue at hand. Despite the differences, a common message comes out: countries may achieve important gains if they could improve their institutions and the quality of policies they produce (as argued by other scholars, such as Killick, 1995). In some cases, such improvement may be enough to compensate for low levels of resources. In other cases, it might potentiate whatever is invested.

Appendix: A Simple Model of Political Cooperation and Public Policy

Imagine a game between two players or “groups,” $i = A, B$. Each player tries to minimize:

$$\sum_{t=0}^{\infty} \delta^t E[L_i(y_t, \theta_t)]$$

where $\delta \in [0,1]$ is a (common) discount factor measuring “patience,” and $L_i(\cdot)$ is a loss function that depends on the “collectively” chosen policy y and the economic shock θ , identically and independently distributed over time, with $E(\theta) = 0$. For simplicity, let:

$$L_i(y_t, \theta_t) = [y_t - (y_i + \theta_t)]^2$$

The fact that $y_A \neq y_B$ captures the elements of conflict, while the fact that everybody’s preferred policy responds in the same direction to the economic shock θ captures the common interest, or economic efficiency. Assume that $y_B = -y_A > 0$.

In each period, after the random shock θ_t is realized, the policy y_t is decided through a collective choice mechanism. Also assume that the recognition rule, $\mu_t = i$, generates an equal probability that each player $i \in \{A, B\}$ be the one-period dictator ($\mu_t = i$ implies that player i decides y_t in period t .) That is:³⁰

$$\mu_t = i, i \in \{A, B\} \text{ with prob. } 0.5$$

Assume furthermore that there is an initial period (zero) in which, by unanimity, players can make some agreements.

We start defining a first-best utilitarian benchmark as:

$$\text{Min} \sum_{t=0}^{\infty} \delta^t E[L_A(y_t, \theta_t) + L_B(y_t, \theta_t)]$$

Given our assumptions, the above minimization simplifies to:

$$\text{Min} \sum_{t=0}^{\infty} \delta^t E(y_t - \theta_t)^2$$

³⁰ This is a very simplified version of several richer collective decision-making mechanisms, such as those in Alesina (1988), Baron and Ferejohn (1989) and Dixit, Grossman and Gul (2000).

so that the first-best policy is $y_t = y^*(\theta_t) = \theta_t$ for all t . This result indicates that the first-best policy is a function of the realization of economic shocks, but independent of the realization of political shocks.

We analyze now the solution to the non-cooperative game. The one-shot Nash equilibrium has $y_t = y_{\mu_t} + \theta_t$. That is, each political player implements his or her most desired policy, ignoring the interest of others. Turning to the repeated game, the infinite repetition of one-shot Nash is always an equilibrium. We define V^N as the present value of expected loss for each player from the infinite repetition of the one-shot Nash equilibrium. Then we have that:

$$V^N = \frac{1}{2} [0 + (2y_B)^2] + \delta V^N = \frac{2y_B^2}{1-\delta}$$

To simplify the analysis we focus now on the possibility of the most cooperative behavior being supported by the punishment strategy of permanent reversion to non-cooperation (as in Dixit et al., 2000, and Dixit, 2003). This is strategy (S1) for both i :

$$y_1^i = y^*(\theta_1) = \theta_1$$

and

$$y_t^i = \begin{cases} y_t^* = \theta_t & \text{if } y_\tau = \theta_\tau \quad \forall \tau < t \\ y_i + \theta_t & \text{otherwise} \end{cases}$$

The payoff along the equilibrium path of cooperation is:

$$V^* = \frac{y_B^2}{1-\delta}$$

for both players, which coincides with the value of the loss function in the first best scenario. In order to verify whether this strategy pair constitutes an equilibrium, we have to consider the value of an opportunistic deviation to $y_{\mu_t} + \theta_t$. Such deviation would move the game to non-cooperation forever, leading to the value:

$$V^D = 0 + \delta V^N = \frac{\delta}{1-\delta} 2y_B^2$$

Comparing the loss functions V^* and V^D , we can conclude that cooperation can be sustained if $\delta \geq 1/2$. The first-best can be attained, then, for δ large enough, that is, when players have long horizons.

Consider now what might transpire in the previous stage of the game, what we call the contracting moment. The features of the resulting policies will depend on the set of feasible contracts. Assume that agreements can be enforced, but that the realization of economic shocks is not verifiable. In that case, it will not be possible to sign contracts that prescribe (economic) state – contingent contracts. On the other hand, the parties can agree on simple “rules.” In our example, it can be shown that the best such rule is to set $y_t = 0$ for all t . This will deliver an expected loss of:

$$V^0 = \sum_{t=0}^{\infty} \delta^t E(y_B + \theta_t)^2 = \frac{y_B^2 + Var(\theta)}{1 - \delta}$$

This outcome is inferior to the first best for both players, i.e., $V^0 > V^*$. (Remember that we are dealing with *loss* functions.) The discretionary cooperative equilibrium is preferable to a rigid rule. Thus, whenever the repeated game delivers cooperation, a rigid rule will not be utilized. Comparing the rigid rule to the non-cooperative case, we have that $V^N > V^0$ if $(y_B)^2 > Var(\theta)$. This implies that when the parties have a limited capacity to self-enforce cooperative agreements (i.e., when δ is low), rigid policy rules (not responsive to the economic environment) will be chosen if the conflict of interest (y_B) is large compared to the volatility of the economic environment ($Var(\theta)$). Thus, we find that when there is a low capacity to enforce intertemporal political exchanges, depending on the extent of the distributive conflict as related to the nature of economic volatility, we may observe highly volatile political agreements or highly inflexible policies.

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