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# The Making of Policy

## Institutionalized or Not?

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**Abstract**[*]

This paper develops a framework for analyzing different policymaking styles, their causes and their consequences in Latin America, finding that lower institutionalization and greater use of alternative political technologies (APTs) are more likely the lower the cost of using these technologies, the higher the potential damage they can cause, the lower the wealth of the economy, and the more asymmetric the distribution of *de jure* political power. Moreover, strategic complementarity exists in the use of alternative political technologies; for instance "bribes by the rich" and "protests by the poor" are likely to be countervailing forces, and will both occur in polities with weaker political institutions.

**Keywords**: Political institutions, Public policies, Institutional strength, Protests, Alternative Political Technologies, Development, Judicial independence, Party institutionalization, Congress capabilities, Cabinet stability, Corruption

**JEL Classification:** D72, D74, D78, H89, K42

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## 1. Introduction

Formal analysis of policymaking within the realm of political institutions has deepened our understanding of how political institutions shape economic policies. There is by now a rich and growing literature on the impact of various legislative and electoral institutions on a number of relevant policy outcomes, such as the size of general public goods, targeted transfers, local public goods, and rent extraction by politicians. Persson and Tabellini (2000) is presently the standard textbook treatment of this literature.[1]

In almost all of this literature, most or all of the relevant action takes place within the context of these formal institutional rules and relatively formalized institutional arenas (the voting booth, the building of Congress, etc.). That is certainly a very good approximation for policymaking in various countries at some moments in time (mostly developed countries in the last several decades), but it is a much rougher approximation of present-day policymaking in other countries or even in most countries at other points in history.

Other than voting, forming political parties, bargaining in the legislature, and the like, there are a number of *alternative political technologies* (such as threats of violence and of disruption of economic activity) that individuals or groups could utilize in order to influence collective decisions. As Persson and Tabellini themselves state (Persson and Tabellini, 2000: 10) in the introduction to their textbook: "Citizens interact with politicians in two ways: through voting at the elections, and through lobbying by organized interest groups. We neglect other forms of political participation, such as protests. Protests are certainly important in the real world, and we wish we had more to say about them. But they have rarely been studied formally by economists, or political scientists (an exception is the interesting work by Lohmann (1994, 1998))." In this paper we take a step towards incorporating alternative political technologies (such as protesting) into models of institutions and policies.

[1] A number of important contributions have been produced since that book was published. Another contemporaneous textbook treatment of the field of Political Economy in economics is provided by Drazen (2000), which is more explicit in the treatment of various substantive areas of (macro)economic policy, and less explicit in institutional comparative statics of the type emphasized in Persson and Tabellini (2000). Dewan and Shepsle (2008a, 2008b) and Besley (2004) provide interesting, albeit idiosyncratic, updated surveys. Alesina, Persson and Tabellini (2006) is a highly readable recent statement by some of the founding fathers of the field.

This paper is an exploration on the implications of an enlarged political action space for the study of institutions and policymaking.[2] We investigate the way in which the presence of these alternative political technologies (APTs), in interaction with formal political institutions and underlying socioeconomic structures, influences the workings of institutions, policy outcomes, and the use of such technologies in equilibrium.

One implication of our analysis is the fact that different countries will have different degrees of *institutionalization* in the way in which collective decisions are made. This is consistent with many observations on, for instance, contemporary policymaking in Latin America (e.g., Stein et al, 2008).[3] Such comparisons reveal important variation across countries and over time in the degree to which formal institutions such as Congress and political parties are the central locus of programmatic demands by socioeconomic actors, and (conversely) the degree to which socioeconomic interests use, instead, alternative political technologies to influence policymaking.

As emphasized in the more abstract literature on institutions, institutions are equilibrium phenomena. As such, they reflect past investments, they summarize information, beliefs and expectations, and they incorporate self-reinforcement effects.[4] It is therefore quite natural to use that general logic to think about the determinants of the relevance of specific institutional arenas for policymaking. When Congress and the political party system are the effective conduits of preference aggregation and political bargaining, various relevant actors will place their bets (that is, their investments) in those

[2] We are not the first authors to consider the impact of alternative political technologies on some aspects of the workings of formal political institutions. Notable recent contributions in that spirit include Ellman and Wachtekon (2000) who study electoral competition under the threat of political unrest, and Dal Bó and Di Tella (2003) and Dal Bó, Dal Bó and Di Tella (2006) who study political agency in models in which interest groups can cause politicians harm. This is also related to earlier insights in Grossman (1991), Hirshleifer (1995, 2001), Skaperdas (2006) and references there. (See also Humphreys, 2001). Some of the intuitions of this paper are reminiscent of results in the international relations literature, for instance "bargaining in the shadow of power" (Powell, 1999). Przeworski (2008) is a very insightful effort motivated by the same facts as this paper (road blockades by farmers in Argentina). We are indebted to Adam Przeworski for generously sharing his ideas on these issues.

[3] Our applied focus on countries with an intermediate level of both economic and institutional development is also a motivation for attempting to develop models that combine the analysis of behavior within the rules of formal institutions with behavior outside those channels. Studies of policymaking in developed countries tend to place great emphasis on formal political institutions and arenas, while studies in the political economy of development, until recently, paid scant attention to those details (compare textbook treatments of US politics such as Schmidt, Shelley and Baredes, 1991, with textbook treatments of African politics such as Chazan et al, 1999). Geddes (2002) provides an insightful overview of the recent move in the political economy of development toward incorporating the study of the details of operation of democratic institutions. See also Bates (1990).

[4] See for instance Aoki (2001), Pierson (2004), Greif and Laitin (2004), and Greif (2006).

institutions, most citizens will believe that those are the spaces where relevant decisions are made, and this whole logic would reinforce and become self-fulfilling. On the contrary, if such institutional arenas are not taken too seriously, and everybody knows that the way of getting something out of the political system is to blockade a road or to bribe the president, those investments in the institutionalization of Congress or parties will not be undertaken, and the lack of institutionalization will be reinforced.[5]

A related implication of our analysis, which fits naturally with the logic of institutions above, is that there is multiplicity of equilibria. Polities might be stuck with higher or lower levels of institutionalization. While polities in more institutionalized equilibria will behave as predicted in the "tidy" literature on political institutions and policies, polities in less institutionalized equilibria might behave differently. This could have important implications for cross-national empirical analysis on the effects of formal political rules on public policy.

Section 2 introduces the general logic of studying institutions and policymaking in the presence of alternative political technologies. Section 3 develops a specific model within that general logic, featuring a formal legislative bargaining arena and a specific alternative technology ("road blockades"). Section 4 describes the general implications of the model and presents various comparative statics results. One of the most interesting (albeit not surprising) results is that, *ceteris paribus*, the more uneven the distribution of political power within formal institutions, the more likely we are to observe extensive use of alternative political technologies and low degrees of institutionalization. Section 5 presents three levels of empirical evidence (preliminarily consistent with the logic of the paper): international cross-country correlations, individual-level survey responses for 17 Latin American countries, and a narrative of the case of Bolivia over the last 25 years, which is suggestive of a switch from a more to a less institutionalized equilibrium. Section 6 briefly discusses one extension introducing more than one alternative political technology. It suggests an equilibrium complementarity across the use of various such

[5] As mentioned in Section 4, two countries of similar levels of development (Argentina and Chile) present a very stark contrast in the dynamics of institutionalization of Congress, the political party system, the Judiciary and the Bureaucracy after the democratization process of the 1980s. All these institutions are much weaker in Argentina than in Chile (contrast Spiller and Tommasi 2007 with Aninat et al., 2008), and this correlates with higher levels of corruption and higher levels of non-institutionalized mechanisms of political pressure such as road blockades and the like. (Section 6 below predicts a positive correlation between corruption and the use of APTs).

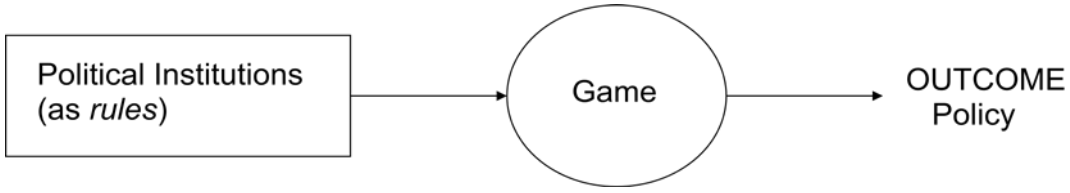
technologies (the rich bribing their way into policy favoritism is likely to coexist with the poor protesting in the streets). Section 7 concludes the paper by reviewing our objectives and results and by plotting the next steps in this agenda.

## 2. The General Logic: Institutional Behavior and Alternative Political Technologies

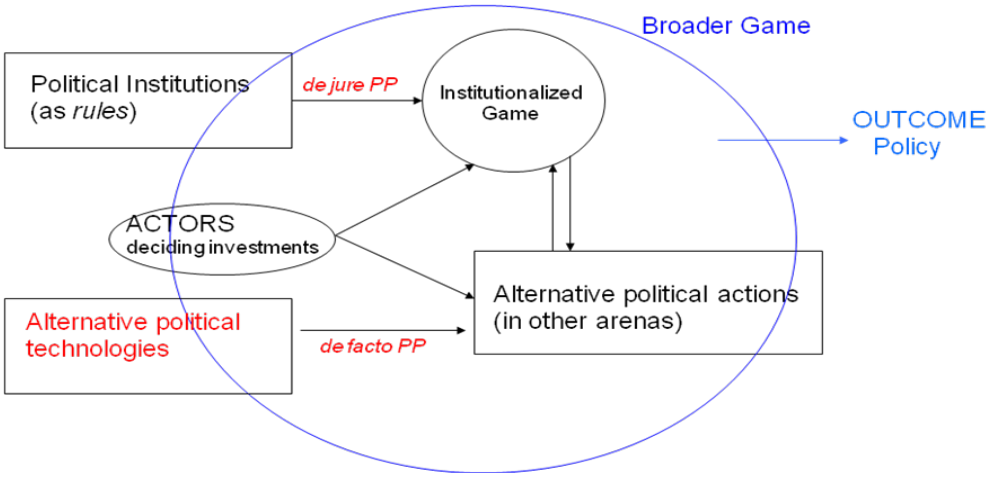
Take any model that treats political institutions as the rules of a game in which policies are decided; these rules could be those that regulate elections, government formation, legislative procedures, judicial review, and the like. Panel (a) of Figure 1 represents that type of game, as in any of the various models summarized in Persson and Tabellini (2000). (In the specific example we develop below, that model will be one of legislative bargaining, developed originally in Baron and Ferejohn, 1989).[6]

**Figure 1. Policymaking Games**

**Panel a. The Basic "Persson-Tabellini" Model**




**Panel b. A broader game with two arenas**




[6] The description of those games involves also a description of the underlying economic structure and policy problem. In our example below, as in Baron and Ferejohn (1989), that structure will consist of splitting a pie of fixed size.

Most of those models presuppose that actors only play within those rules and within those institutions. As stated in the introduction, that is not a bad approximation to use in studying broad issues of policymaking in a number of polities today, but it seems to miss a very important part of the action in other cases.

Our modeling strategy consists of calling that game the *institutionalized* part of the game—i.e., the part of a broader game (with multiple arenas) that takes place *inside* those institutionalized arenas. To that game, we add a prior stage in which actors choose between participating in that institutionalized game and participating in alternative arenas.[7] Also, we will need to specify the feasible actions in these alternative arenas, the protocols of interaction within those arenas, and the protocols of interaction among formal and informal arenas.

Panel (b) of Figure 1 presents a scheme of this broader game. Borrowing the language used by Acemoglu and Robinson (2006a and 2006b), we call *de jure political power* the one assigned by formal political institutions, and *de facto political power* the one assigned by the technologies of alternative political action. For instance, if the alternative to institutionalized decision-making was the threat of violence, such power would be conferred by the capacity to exercise violence. More generally, what alternative political technologies are we referring to? Classifying a set of various possible political actions (actions to influence collective decision-making) into "institutionalized" versus "alternative" is to some extent an arbitrary choice. Which way one wants to classify things in practice would depend on the exact question at hand.

Figure 2 presents some examples of political actions. Some of them, towards the left of the diagram in white, are closer to the more institutionalized end of the spectrum (forming a political party, writing to your congressman), while others, towards the right of the diagram in dark grey, are clearly within the realm of the alternative (road blockades, physical threats). A number of other political actions are harder to classify, including various forms of lobbying,[8] as well as public demonstrations to inspire sympathy in public

[7] The actors we have in mind are underlying socioeconomic groups. At the level of abstraction where we will be working in the simple model of Section 3, these actors will choose between ("direct democracy") participation in a legislative assembly, and exercising alternative action elsewhere. Clearly, enriching the details of political agency by explicitly modeling representative democracy is a next step in the agenda.

[8] Lobbying by interest groups is an activity that has been well studied in political economy and in political science. The best know treatment by economists is that of Grossman and Helpman (1994, 2001). We believe that some forms of lobbying, within certain rules, would fit more naturally in the "institutionalized" part of

opinion (Alston, Libecap and Mueller, 2008). Some actions such as capital flight to avoid excessive taxation are in principle part of the economic side of the model and not part of the political action space, unless they involve explicit political coordination.[9] Strategies employed by trade unions, for instance, vary from the extremely institutionalized ("playing golf with Republican legislators"), to the constitutionally sanctioned right to strike exercised impeccably, to the borderline-criminal physical intimidation utilized in some countries at some points in time.[10] Going into the darker side of Figure 2 and of reality, some strategies we would have no doubt in classifying as "alternative," such as that exercised by Colombian drug lords when offering new judges the choice between *plata* (bribes) or *plomo* (bullets), described in Dal Bó, Dal Bó and Di Tella (2006).

**Figure 2. Alternative Political Technologies**

| **More Institutionalized** | | **Less Institutionalized** |
|---|---|---|
| forming a political party | demonstrations<br>to inspire sympathy | |
| writing to your congressman | legal strikes | road blockades |
| campaign contributions | subtle coordination<br>of capital flight | coordinated economic<br>disruption |
| clean lobbying | bribes<br>*"plata"* | |
| | | violent threats<br>*"plomo"* |

the game—as when Grossman and Helpman say, referring to the US, "according to the survey findings, the activities undertaken by the greatest numbers of organized interest groups are those intended to educate and persuade lawmakers of the wisdom of the groups' position." (Grossman and Helpman, 2001: 4). Other forms of business influence (quite prevalent in several Latin American countries and various other places) are much closer to the darker part of Figure 2. Understanding why some forms of business participation in policymaking are more prevalent than others across different polities is an important pending research question; see Schneider (2009) and Spiller and Liao (2008) for some relevant insights. We believe that some of the logic of this paper, properly adjusted, could be helpful in thinking about those issues.

[9] Such explicit coordination by business actors is pervasive in many accounts of politics and economic policymaking in developing countries. See for instance Dornbusch and Edwards (1991), Bruno (1993), and Fanelli and McMahon (2006).

[10] See for instance Murillo and Schrank (2009), Farber (1986), Przeworski (1985) and Austin-Smith et al (2008).

In the rest of the paper we will work at some level of abstraction, focusing on a "black or white" classification in which some actions will take place clearly within the "institutional" realm and others clearly outside formal institutional channels.[11] For concreteness, we will speak as if the alternative political technology (APT) in question involves road blockades or street protests, but in principle, the abstract formulation we utilize could also represent technologies such as collective action by some economic sectors that could damage the economy. The choice of road blockades as our illustration is not accidental, since at the time of this writing road blockades are a common form of political action, influencing decisions taken in more formal arenas in various Latin American countries such as Argentina and Bolivia (see Section 5).

In the model, we will be assuming that the decisions to take the institutional road or the "street" road are indeed alternatives. This is a simplified way of capturing an important point of our argument, which emphasizes the investment component of institutions.[12] One can think of examples in which certain political actors will take different roads depending on what the environment has to offer them. For instance, there will be circumstances in which business interests will invest more resources in strengthening right-wing political parties and think tanks that defend their general interests (as they do in Chile) than in bribing politicians, judges, or bureaucrats to obtain special privileges for their firm or sector (as they do in Argentina). As extensively recognized in the literature on democratization, current political losers might accept their short-term fate gracefully and invest in doing better in the electoral and coalitional arena next time, or they can use violence in an attempt

[11] Our use of the terms institutions and institutionalization shifts back and forth between more formal theoretical notions and more commonplace usage. One can (as we do in our model) assign a great deal of structure to actions "in the street" and in a strict sense call such actions highly "institutionalized." That said, most people who are not professional social scientists would agree to call bargaining in Congress more institutional behavior than burning tires in the street (no matter how structured the latter activity might be).

[12] Political actions such as voting, campaigning for your favorite candidate, writing letters to your Congressperson, participating in peaceful protests, participating in violent protests, threatening to kill your opponents, or killing Supreme Court Judges need not be substitutes. Under some conditions they are used jointly and under some conditions they are used separately in different political equilibria by different actors. A more general understanding of the conditions under which various political actions are complements or substitutes is an important question that we do not answer in this paper. What we do is emphasize one set of mechanisms, particularly investment under some constraints, which makes some actions alternative to others. It turns out that the particular actions we model in this paper, even though potentially complements in some environments, are in practice substitutes within our empirical sample. In Section 5.2 we provide evidence indicating that protesting in the streets and more institutionalized forms of political participation (such as voting or contacting your Congressman) are substitutes in most of Latin America.

to change outcomes.[13] These different types of decisions have an important investment component and are likely to reinforce the degree of institutionalization or lack thereof over time.[14] An important aspect of this logic is what Aoki (2001, Chapter 5) calls the co-evolution and complementarity of institutions and human asset types. Particular institutions (and institutional equilibria) will lead people to invest in assets more productive in those environments, reinforcing the prevalent form of institutionalization (or lack thereof). In the example of this paper, for instance, the type of leadership more functional for getting your way in Congressional bargaining might be very different from the type of leader that specializes in violence (or in corrupting politicians).

The actors in our game, then, will have to make a prior decision of whether to enter the more formal or the less formal arenas of political action.[15] These decisions at the level of individual actors, are then aggregated in order to find an equilibrium to this broader game. Both the individual choices and the polity-level equilibrium will be highlighted in the empirics of Section 5.

In the next section we present one specific model of policy determination in the presence of formal political institutions and of alternative political technologies. In Section 4 we return to some general considerations, using the model as explicit illustration of some of those considerations.

## 3. One Specific Model[16]

Any model within the framework we are suggesting will need to specify three components that will constitute sets of exogenous parameters for comparative statics purposes. These components are: (1) policy problem (mapping from feasible policy vectors to utilities of the players, which subsumes aspects of the socioeconomic structure as well as available policy technologies); (2) political institutions; and (3) alternative political technologies (and the protocols of interaction among different political arenas).

[13] See for instance Przeworski (2005), Benhabib and Przeworski (2006), and Wantchekon (2000).
[14] See for instance Pierson (2004). Recent works emphasizing the dynamics of investment in institutions include Besley and Persson (2007), especially Section 4, and Lagunoff (2001).
[15] Within the specific model of the next section, we have also worked out the case in which actors could participate in both arenas, and many of the results are the same. Still, for substantive reasons related to the logic of institutions and investment explained in the text, we want to emphasize the case in which these are *alternative* arenas.
[16] The game is presented and analyzed in the text in a stylized and intuitive manner. See the Appendix for a more formal treatment.

### *3.1 Presentation of the Model*

In the example we present here, these components are specified as follows.

(1) *Policy problem*

The policy problem consists of splitting a pie of size $X$ among $n$ risk-neutral players. This is a standard allocation problem which has been extensively studied in conjunction with the set of political rules we assume in (2), and it is a good general approximation for a number of situations where distributional issues are central.

(2) *Political institutions*

Political institutions consist of one variant of a well-known legislative bargaining model set forth by Baron and Ferejohn (1989). Each of the $n$ players has an ex ante probability $p_i$ of being recognized as agenda setter, with $i$'s ordered in such a way that $p_i$ increases in $i$ ; $p_i < p_{i+1}$. It is more straightforward to think about this simple example being a case of direct democracy, in which the $n$ players who could go to Congress are the citizens themselves. Alternatively, we can think of the $n$ players as the underlying socioeconomic constituencies, each of which could be represented in Congress by a perfect agent. (We refer to agency problems in Section 7).

After the agenda setter proposes an allocation, a vote is taken among all the members of Congress. If a majority accepts the proposal of the agenda setter, then that proposal constitutes the outcome of the collective legislative decision. If the proposal is not accepted by a majority, then the collective legislative decision is a status quo allocation which, for simplicity, we normalize to 0 for every player.

We use this very simple "closed rule" formulation of the legislative bargaining problem for brevity. The main logic we are trying to pursue in this paper does not depend on any specific extensive form of the institutionalized game;[17] the crucial individual decisions and equilibrium features depend on comparing the expected values of participating in the institutionalized decision-making process with that of using alternatives.[18]

(3) *Alternative political technologies and interactions with formal political arenas*

[17] We are indebted to Massimo Morelli for highlighting this point.

[18] Furthermore, the expected values of the particular formulation we use are analogous to the actual allocation that would be obtained under an open rule protocol with no discounting between rounds.

Any assumption one can make regarding alternative political technologies will embed ("physical" and "institutional") considerations about the effects of those "alternative" actions on the utilities of players (the ones undertaking the action and the rest of the polity), and about collective action technologies, commitment technologies, and allocation protocols in informal arenas. The main purpose of this paper is to promote the extension of analysis of policymaking under formal political institutions to include the explicit modeling of these outside options, rather than peddling any particular assumption about (or example of) APTs. For concreteness, in the rest of the paper we focus on a specific example ("road blockades" or "going to the street"). Clearly, modifying any of the assumptions below constitutes an interesting exercise of comparative statics on these alternative political technologies.

Protesting has an individual cost $c$. If at least $T$ players decide to protest they can (credibly) threaten to inflict a damage of size $K$ to the economy, with $2 \leq T$ and $0 < K < X$**.** If less than $T$ people protest, they cannot cause any damage. This very simplified damage technology is represented in Figure 3, where $m$ stands for the number of people who choose to use this alternative. This very simple formulation captures in a stark manner some properties of our framework, which we discuss in more detail in the next section.[19] We also assume that "The Street" acts as a unified actor, ignoring collective action issues among the protesters (after the threshold $T$). Furthermore, we assume that The Street is endowed with a commitment technology, so that it can commit ex ante to cause or not to cause damage in response to specified actions by players in Congress.[20]

[19] In particular it embeds a scale economy / strategic complementarity which will be the seed of multiplicity of equilibria. For more sophisticated treatments of this threshold logic see Lohmann (1994) and references therein. The seminal model is in Granovetter (1978).

[20] For computational simplicity we will assume that whatever is given to protesters is shared equally among them. This could be due to the structure of programs or policies that they receive (rural protesters in Argentina fight for lower taxes on agricultural exports, urban protesters fight for receiving social programs).

**Figure 3. Damage Technology**


The timing of the game, represented in Figure 4, is as follows:

1. At the beginning of the game, each actor (simultaneously) decides whether to go to Congress or to "go to the street" to protest. Let $m$ be the number of players that go to the street and $n-m$ the number of players that go to Congress. We denote by $\mathcal{M}$ the set of players in the street and by $\mathcal{N}\backslash\mathcal{M}$ the set of players in Congress.[21]

2. Nature chooses an agenda setter $\mu$ among those players that went to Congress. Each player in Congress has probability $\frac{p_i}{\sum_{i\epsilon\,\mathcal{N}\backslash\mathcal{M}}\,p_i}$ of being recognized as the agenda setter.

3. The $m$ actors in the street decide how much to request from Congress. Let $Z$ denote the total amount they request. Given the commitment assumption, they will be making a threat of causing damage $K$ unless a total amount equal to or greater than $Z$ is granted to them.

4. The agenda setter in Congress proposes an allocation, a vector $S^{\boldsymbol{\mu}} = \{s_i^{\boldsymbol{\mu}}\}_{i\epsilon\mathcal{N}}$ of shares, with $\sum_{i=1}^{n} s_i \leq 1$ and $s_i \in [0,1]$.

5. The $n-m$ players in Congress vote on the agenda setter's proposal. If more than half of the members of the legislature accept the proposal, it constitutes the collective legislative

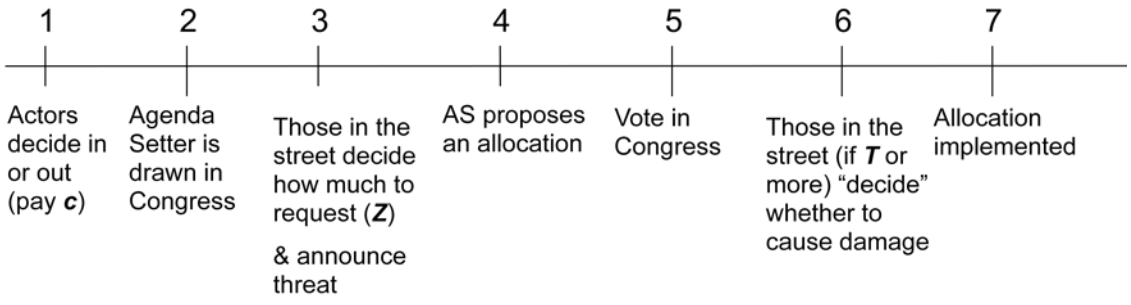
[21] As explained in the Appendix, each player chooses an action $a_i \in \{0,1\}$, where $a_i = 1$ means going to Congress, and $a_i = 0$ means going to the street. The summation of all $a_i$`s will be interpreted later as investment in formal institutions.

decision. If $S^{\mu}$ is not accepted by a majority, then the legislative decision allocates 0 to all players.[22] Let $S = \{s_i\}_{i \in N}$ denote the final outcome of the legislative process.

6. Those in the street, if $T$ or more, decide whether to cause damage or not. (This is an irrelevant decision point under the assumption of commitment in 3, but we keep it here for future extensions).

7. The allocation is implemented. If no damage was caused, each player receives $x_i = s_i X$. If damage was caused, each player receives $x_i = s_i(X - K)$.

**Figure 4. Timing of the Game**




### *3.2 Solving the Model*[23]

We proceed by backward induction from the last stages of the game in Figure 4. Given the assumption of commitment by protesters, stages 6 and 7 are mechanically implemented after decision 4-5 is made. The latter is just a standard Baron-Ferejohn game, with a small twist. It is easy to show that the agenda setter will give 0 to all other players in Congress and allocate the whole pie (except anything given to the protesters) to himself or herself.[24] The novel question is how much to give to the protesters. Clearly, if $m < T$, the agenda setter will give nothing to protesters. If $m \geq T$, then the amount he or she will allocate to

[22] Again, this very stark formulation is chosen for expositional simplicity.

[23] The solution is proven formally in the Appendix.

[24] More generally, the allocation among the $n - m$ players in Congress could be defined as $s_i = 0$ for any $i$ not part of the winning coalition, $s_i = \varepsilon$ for those $i$'s in the winning coalition other than the agenda setter, and $s_i = 1 - \left[\left(\frac{n-m}{2}\right) - 1\right]\varepsilon$ for the agenda setter. We follow the standard convention of letting ε 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 ε>0. As already stated, the fact that the other members of Congress get zero is just for computational simplicity. What actually matters for the relevant decisions is their expected utility in Congress before the agenda setter was selected by nature. This is a reduction of a richer intertemporal structure (where those "included" will eventually get their share) into a one-period model.

the protesters will depend on the amount $Z$ that they request. If they request $Z > K$, the agenda setter will give them nothing, since it is better to keep $(X - K)$ than $(X - Z)$. If they request $Z \leq K$, then the agenda setter will grant them $Z$. This response will lead the protesters (in stage 3) to request exactly $Z = K$, since they will get nothing if they go above $K$, and $K$ is preferred to anything below it. (As stated, we assume that whatever is given to protesters is shared equally among them, so that each protester will receive $K/m$.)

Given that stage 2 is a move by nature, this brings us to the key choice of arenas in stage 1. Given each player's expectation of what he will receive if he goes to Congress, and his expectation of what he will receive if he goes to the street, each player has to decide between these two arenas, taking as given the choices of all the other $(n - 1)$ players. Finding equilibria to this game consists of finding the Nash equilibrium to these $n$ individual decisions. We present the results in the following proposition, which is presented more formally and proven in the Appendix.

*PROPOSITION 1:*

*(a) There always exists a* ***Full Institutionalization Equilibrium*** *in which everybody is in Congress and no alternative arenas are used.*

*(b) For some parameter values, there is a* ***Low Institutionalization Equilibrium*** *in which* $m^*$ *actors go to the street.*

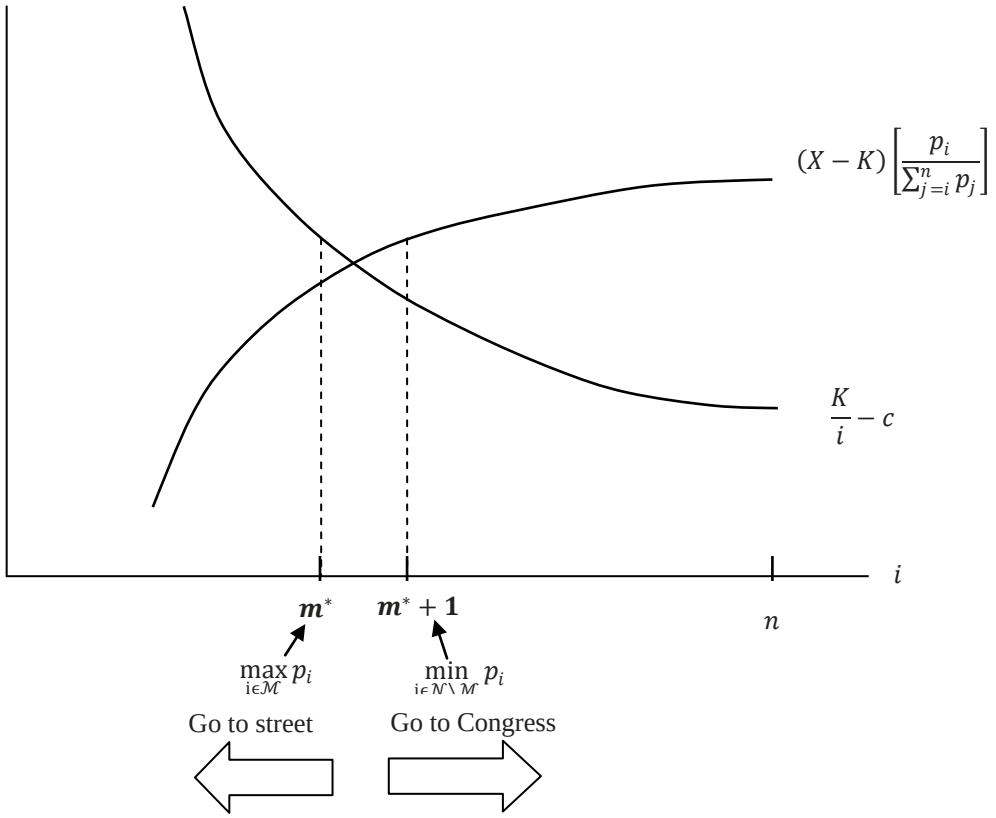
The existence of the Full Institutionalization Equilibrium (FIE) is guaranteed by the fact that if only one player chooses to be in the street, he or she will be unable to credibly threaten to cause any damage, and hence receive zero from the agenda setter, getting a final payoff of $-c$, which is less than what he or she would expect to receive in Congress. Hence no one would want to deviate unilaterally from a full institutionalization equilibrium.

Figure 5 provides an intuitive representation of the Low Institutionalization Equilibrium (LIE). The figure plots the value of being in Congress (the upward-sloping curve) and the value of being in the street (the downward-sloping curve) from the point of view of an individual player as a function of his/her type, under the assumption (which is true in the type of LIE equilibria we select)[25] that all players of lower type will be in the street, and all players of higher type will be in Congress. Let $m^*$ be the highest integer to

[25] See Appendix.

the left of the point where these two curves intersect. Players 1 to $m^*$ (those with the lowest ex ante probabilities of being selected agenda setter in Congress) will go to the street, and players $m^* + 1$ to $n$ will go to Congress.

**Figure 5. Low Institutionalization Equilibrium**



The Full Institutionalization Equilibrium takes us back to "the world of Persson and Tabellini" in which the institutionalized part of the game is the only relevant one. The Low Institutionalization equilibrium, on the other hand, will be characterized by the use of alternative political technologies and by weakness of formal institutional arenas.

In the next section we interpret these results and provide some comparative statics and empirical predictions, as well as a slightly broader discussion.

## 4. Results

The simple model we have presented in Section 3 already contains the flavor of the more general points we want to raise in this paper. One first result we want to highlight is the following:

### *4.1 Result 1: There are Different Degrees of Institutionalization in Equilibrium.*

If we interpret the summation of action $a_i$'s (the choice of going to Congress) as the aggregate investment in formal institutions, it will be technically trivial—but substantially important—to add the effects of these aggregate investments. This captures in a blunt manner a very important aspect of the variation of institutions across countries. In their choice of arena, the actors of the model are deciding whether to take the institutionalized route or not. In this simple formulation the aggregation of this behavior (that is, the number of people operating through formal institutions) is what we can call the degree of institutionalization in equilibrium.

Investing in technologies that increase strength and capabilities in the institutionalized game (such as getting a PhD in Public Policy) or in technologies that increase strength and capabilities in the street (such as buying weapons), clearly would have a different impact on the productivity and strength of formal institutions, as well as on the quality of the output the polity generates. There are various reasons (beyond our simple static model) why more institutionalized collective decision-making arenas will lead to better policies and better outcomes, such as providing a better structure for exchange of information and for the agreement and enforcement of intertemporal cooperation. According to Pierson (2004: 107) "political institutions can serve to coordinate the behavior and expectations of decentralized actors (Carey, 2000) and to facilitate bargaining by creating monitoring bodies, issue linkages, and mechanisms for making credible

commitments (Keohane 1984; Weingast 2002)." Scartascini, Stein and Tommasi (2009) show that more institutionalized policymaking environments lead to policies that are more stable, (yet) more adaptable to changing circumstances, more coordinated and coherent, and better implemented.

Take the literal example of the institution we model here: Congress. Legislatures are critical institutions in the effective functioning of a democratic system and in the policymaking process. Yet, the extent and nature of the role played by legislatures in the policymaking process vary greatly from country to country. The sheer magnitude of academic studies of the US Congress proves the importance of that institution in American politics and policymaking, establishing a number of relevant stylized facts: members of the US Congress exhibit remarkable longevity, and they tend to specialize in committees; the US Congress plays an active role in policymaking, it engages in considerable oversight of the public bureaucracy, and it is the focus and main entry point of political action by any interest group attempting to influence American policymaking.[26] None of these features is true for the Argentine Congress, in spite the fact that Argentina is a country whose constitutional structure has strong similarities with that of the US (Jones et al., 2002). The comparison can also be taken among countries of similar levels of development: the Chilean legislature plays a much more important role in the policymaking process of that country than does its Argentine counterpart. These different roles in policymaking are associated with various measures of legislators' and legislatures' capabilities, which have a clear investment component: legislators' duration, legislators' education, degree of specialization in policymaking committees, resources available for policy analysis, esteem in the eyes of the public, and appreciation of the legislature as an important place from the point of view of politicians' careers.[27] Saiegh (2009) and Stein and Tommasi (2007) provide wider comparisons, showing a strong correlation of such objective indicators of Congress capabilities with assessments about the importance of Congress in policymaking across 18 Latin American countries.[28]

[26] See for instance Weingast and Marshall (1988), Shepsle and Weingast (1995), Diermeier, Keane and Merlo (2005), and Grossman and Helpman (2001) and references there.
[27] See, for instance Spiller and Tommasi (2008), Aninat et al. (2008), Tommasi (2008), and Saiegh (2009).
[28] In the empirical section below we provide some evidence using indicators of the strength/quality of various political institutions along the lines just suggested for the case of Congresses.

Result 1 also relates to another important general point, central to theoretical discussions about the notion of institutions in institutional economics and institutional politics. Academic and common usage of the term institutions refers to two related but distinct concepts: "institutions as *rules*" and "institutions as *equilibria.*" The most common cited definition of institutions in modern social science is probably that of Douglass North: institutions "are the rules of the game in a society, or more formally, are the humanly devised constraints that shape human interaction" (North, 1990: 3). A number of scholars have recently turned to a conception of institutions which identifies the essence of institutions as being equilibrium phenomena rather than rules. Exact definitions vary among these authors, but the core idea is that it is ultimately the behavior of others, rather than the rules themselves, that induces each person to behave (or not to behave) in the way prescribed by the rules.[29] Our model captures that distinction in a very simple framework. We have political institutions as rules in the allocation of *de jure* political power, but we also have different degrees of institutionalization in equilibrium, as captured by $n - m^*$ (and the associated investments). The notion of institutions as equilibria very naturally takes us to the second point we want to highlight:

### *4.2 Result 2: (If) Strategic Complementarities Exist, a Multiplicity of Equilibria Follows*

The stark assumptions of the model in Section 3 are just one example of possible forces leading to multiplicity of equilibria through strategic complementarities. In the literal formulation we use, the strategic complementarity appears through the shape of the function representing the damage technology in Figure 3: if only a very small number of actors participate in a street blockade, they will not be able to make any credible threat of further damage.[30] That being the case, the incentive of an additional actor to participate in APTs is very low, so that (up to a point), the decision to go to the street is a strategic complement across players.[31]

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[29] See for instance Aoki (2001), Calvert (1995a, 1995b), Carey (2000), Dixit (2009), Fearon (2006), Greif (2006), and Greif and Kingston (2008).

[30] Parameters such as $c$ or $T$ in our model will depend on various issues, including the "repression technologies" in place. One can also think that, in the more dynamic version of this story, institutionalized actors might invest resources in improving repression, which would be another detraction of resources from more "productive" institutional investments. (We thank Susan Rose-Ackerman for highlighting this point).

[31] One could make somewhat equivalent assumptions in the functioning of the formal institutional arena, and that might give rise to a third type of equilibrium, a Non-Institutionalized Equilibrium. Coming from that corner could be an interesting extension if one wants to link the logic of this paper with discussion about

More generally, there are a number of forces that make various actions strategic complements, which reinforces the tendency of this type of models to generate multiple equilibria. In Section 6 we briefly discuss a simple extension with two types of alternative political actions, and we notice that there are reasons why a more extensive use of one APT is likely to induce a more extensive use of the other APT. This seems to be an example of a more general point: there are various reasons to believe that non-institutionalized or de-institutionalized activities of one type are likely to induce de-institutionalized activities of other types. There are, then, complementarities among various non-institutionalized actions, as well as complementarities among various institutionalized actions. This is consistent with findings in Stein and Tommasi (2007) within Latin America, and Scartascini et al. (2009) for a larger sample of countries, reporting a positive correlation across a number of measures of institutional strength in various domains (policymaking capabilities of Congress, party system institutionalization, Judicial independence, strength and independence of the bureaucracy, etc.)

The fact that there is multiplicity of equilibria has potentially important implications in terms of theory, in terms of interpreting and analyzing empirical evidence, and also in terms of thinking about possible practical recommendations. Even using the simple two-equilibrium model presented above, one can say the following. If the polities we observe "in reality" are all in the institutionalized equilibrium, then the standard type of political economy model—which presupposes that what we call the institutionalized part of the game is all that there is—will be the right model to describe what we observe and to generate empirical implications. In that case, after this detour we would be back "in the world of Persson and Tabellini." But if, on the contrary, several or all polities are in the other equilibrium, we will observe plentiful use of alternative political technologies and polities with weaker institutions. The possibility of having different polities at different equilibria might also have important implications for cross-national empirical analysis on the effects of formal political rules on public policy. We elaborate on this point in the concluding section.

Multiplicity of equilibria also implies that two countries with similar fundamentals (in terms of socioeconomic structure and political institutions as rules) might end up

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moving from anarchy to some forms of institutionalization (Hirschleifer, 1995; Barzel, 2002; Dixit, 2003 and 2009; Skaperdas, 2006; and references there).

"stuck" in different equilibria. And as stated above, these things could create strong path dependence, with these different equilibria being self-reinforced by investments over time (Pierson, 2004). On the other hand, this multiplicity also gives rise to the possibility of observing equilibrium switches, a point that we develop more fully in Section 5 with the illustration of the Bolivian example, a country which seems to have gone from a cycle of institutionalization in the 1980s and 1990s to a cycle of de-institutionalization after that, the latter cycle being associated with a great increase in the use of alternative political technologies.

### *4.3 Set of Results 3: Comparative Statics*

One important question is what are the implications of equilibrium multiplicity for attempting to map the predictions of the model into empirical evidence. Fortunately, the particularly simple structure of the model of Section 3 enables us to make some comparative static predictions in spite of the fact that we have multiple equilibria. Under the maintained assumptions of the model, the FIE always exists, while the LIE exists for some parameter values and not for others. This means that for some parameter values we will have only the FIE (call that set of parameters ***F***), while for other parameter values we can have both types of equilibrium (call that set of parameters ***B***). If the real world were fully described by this model, then we would expect that in polities characterized by a vector of parameters belonging to ***F*** we should observe the characteristics associated with the FIE, while in polities characterized by a vector of parameters belonging to ***B*** we could observe either of the equilibria. Assigning in that latter case a non-zero probability to each of the equilibria will be enough to generate empirical predictions. If conducting comparative statics on one given parameter (say $\alpha$) increases the set of other parameters for which LIE is an equilibrium, then we will say that increasing parameter $\alpha$ increases the possibility of observing the Low Institutionalization Equilibrium (and its associated properties).

It turns out that, in the simple structure of our model, any comparative statics exercise that (using the language of the previous paragraph) increases the possibility of LIE, also increases the number $m^*$ of people going to the streets within the LIE (see Appendix), so that the derivative of $m^*$ with respect to any parameter is a sufficient statistic

for the way in which that parameter affects the degree of institutionalization in either interpretation (within LIE, or in terms of probability of being in LIE as opposed to FIE). Using that logic, it is easy to show the comparative static results summarized in Table 1 (see Appendix).

**Table 1. Comparative Statics**

| **Parameter** | **Probability of being in the non-institutionalized equilibrium (or inverse degree of institutionalization )** |
|---|---|
| ↑ Cost of using APT (*c*) | **(-)** |
| ↑ Damage potential (*K*) | **(+)** |
| ↑ Wealth (*X*) | **(-)** |
| ↑ Asymmetry distribution of *de jure political power* (asymmetry distribution of Pi's) | **(+)** |

Not surprisingly the probability of being in the LIE increases as the use of APTs becomes less costly, as the potential damage APTs can cause increases, and as the wealth of the economy decreases. More interestingly, the probability of being in a Low Institutionalization Equilibrium increases as the distribution of *de jure* political power becomes more asymmetric. As the vector of $p_i$'s becomes more asymmetric, more actors at the lower end of that distribution will find participation in formal political institutions less appealing, inducing more street action and lower institutionalization.[32]

[32] This result has a clear flavor of "exclusion of the poor," and we believe that to be an important case in reality. Yet, the result is more general than that, and it applies to any case in which the *de jure* power of a relevant set of political actors tends to under-represent them in comparison to their ability to put collective action together and threaten economic disruption. The very visible 2008-2009 demonstrations of rural producers in Argentina against large increases in export taxes by the Cristina Fernández de Kirchner administration are a case in point. Those demonstrators were not the dispossessed, but a segment of the Argentina middle and upper class underrepresented in the Argentine political system.

## 5. Some Empirical Evidence

This section suggests that the implications that can be derived from a simple model such as the one above, and from the more general logic presented in the paper, are not inconsistent with some preliminary evidence. We do not take this evidence as conclusive, but we see it as encouraging further theoretical and empirical work along these lines. We provide evidence at three levels. Section 5.1 shows some cross-national correlations consistent with the predictions of the model. Section 5.2 summarizes individual level evidence from Machado et al. (2009), which is also consistent with some predictions of the model. Section 5.3 presents a narrative of events in Bolivia in the last 25 years which seems consistent with a switch from a more institutionalized to a less institutionalized equilibrium, along the lines suggested in the paper.

### *5.1. Cross-Country Correlations*

The model and logic presented above imply a number of correlations. One such implication would be:

*Implication 1: A negative correlation exists between the strength (quality) of political institutions and the use of alternative political technologies.*

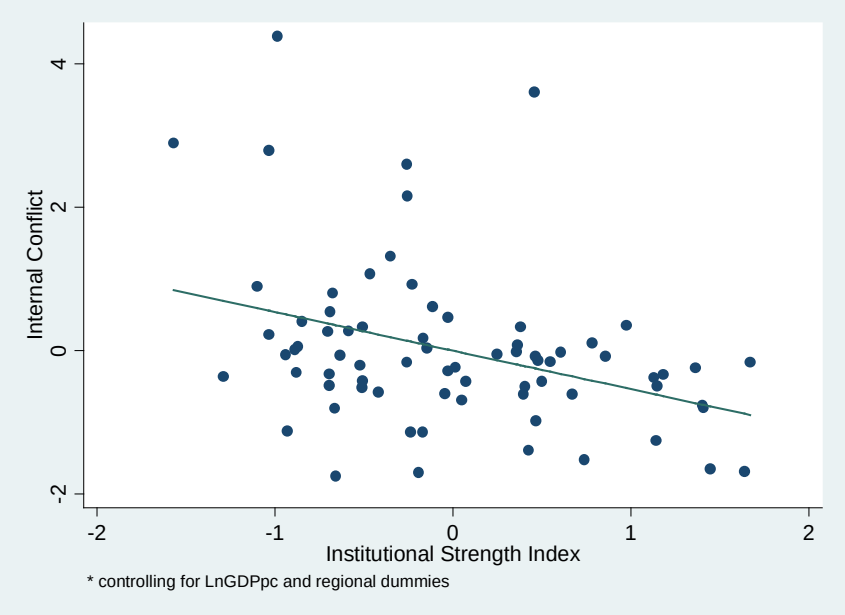
In previous work we have attempted to develop (drawing from in depth analyses of several Latin American countries, as well as available broader international data sources) a number of indicators of the workings of political institutions that seem good proxies for the strength of policymaking institutions as understood in this paper (see Stein and Tommasi, 2007, for Latin America, and Scartascini, Stein and Tommasi (2009) for a broader cross-section of countries). Those measures, which try to proxy judicial independence, congress capabilities, party system institutionalization, and bureaucratic quality are constructed from a number of international data sources (see Berkman et al., 2009).

On the other hand, the Cross-National Time-Series Data Archive provides information on a number of political activities that can naturally proxy for some of the APTs that we emphasize in the paper. In particular, there are measures of anti-government demonstrations, strikes, riots, political assassinations, guerrilla warfare, government crises,

purges, and revolutions. One commonly utilized index combines the first three types of political activity under the heading of "Internal Conflict."

The measures of institutional quality tend to be negatively correlated with the various measures of conflict, with the coefficients being statistically significant when we run univariate and multivariate regressions with some standard controls such as GDPpc, regional dummies, level of democracy, etc. To save on space we report here only one such correlation, in Figure 6, which shows the correlation between the measure of internal conflict and a measure of institutional strength that combines variables that capture the degree of judicial independence, congress capabilities, party institutionalization and bureaucratic quality.[33]

**Figure 6. Correlation (Institutional Strength; Use of Alternative Political Technologies)**



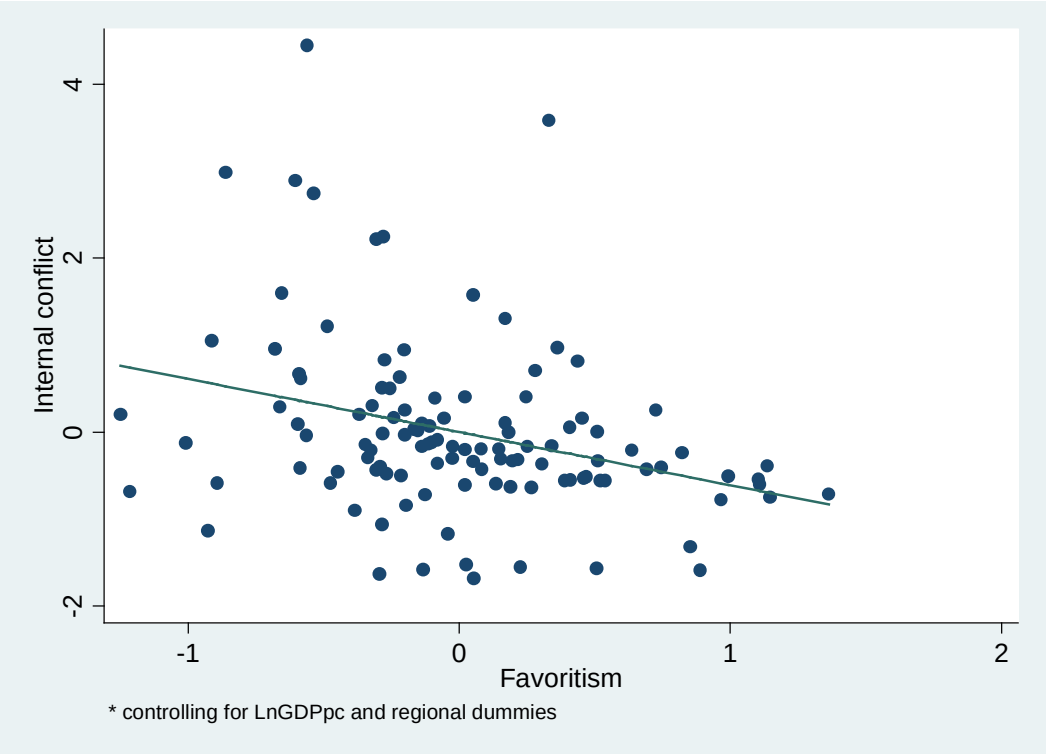

Our model also has implications for correlations among institutional and conflict variables with some characteristics of policy outcomes. For instance, the following:

*Implication 2: A positive correlation between weaker institutions, more use of alternative political technologies, and favoritism in public policies.*

[33] For details on the construction of the variable see Machado, Scartascini, and Tommasi (2009)

*De jure* political institutions that generate more biased policy outcomes are likely to lead to increased use of alternative political technologies by the losers, and this would induce weaker total investments in the institutionalization of the system. In the figure, we show the correlation between the APTs and a measure of biases in government policy called *favoritism*, compiled by World Economic Forum's Global Competitiveness Report (GCR).[34]

**Figure 7. Correlation (Use of APTs, Favoritism in Public Policies)**




Certainly, we are not the first authors to report correlations such as those in Figures 6 and 7, and those correlations do not say anything about causality. Further work with a more fully specified theoretical and empirical model will be necessary to address issues of causality.

As a (small) step in the direction of addressing issues of causality, we have started to investigate individual level data for 18 Latin American countries, which lead to some

[34] This particular variable measures whether when deciding upon policies and contracts, government officials usually favor well-connected firms and individuals or are neutral among firms and individuals. We have averaged the responses for the years for which the data is available (2002, 2005, and 2006). See Berkman et al. (2009) for details and other measures of "public-regardedness."

interesting findings in their own right, as reported in Machado, Scartascini and Tommasi (2009), part of which we summarize in the next section.

### *5.2. Individual-Level Regressions*

In this section we explore the effect of the degree of institutionalization on individuals' propensity to participate in protest in Latin American countries. Our analysis is based on data for 17 countries gathered by the Latin American Public Opinion Project (LAPOP) in 2008. These surveys were designed to be representative of the voting-age population in each of the countries,[35] with subnational units chosen randomly using probabilities calculated based on the most recent census data. The survey covers a broad spectrum of topics ranging from assessments of the economic situation to respondents' engagement in different forms of political participation.

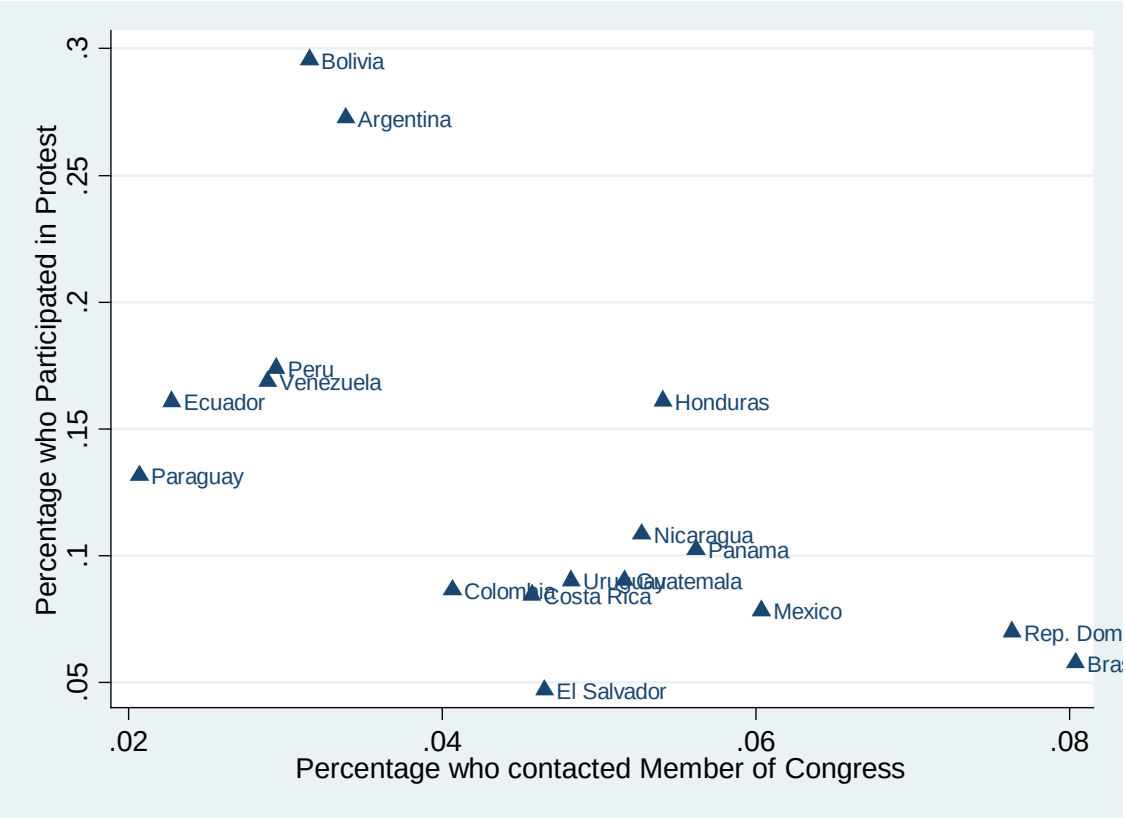
Among those questions there is one which is of particular interest as a dependent variable in our analysis: *Have you participated in a protest or demonstration in the past twelve months? Sometimes, almost never, never*.

One interesting finding already shows up in summarizing some of these dependent variables at the country level. As Figure 8 suggests, Latin American citizens view contacting their Congress representatives and protesting in the streets as alternative political options.[36]

[35] The countries and respective number of observations are: Mexico (1,560), Guatemala (1,538), El Salvador (1,549), Honduras (1,522), Nicaragua (1,540), Costa Rica (1,500), Panama (1,536), Colombia (1,503), Ecuador (3,000), Bolivia (3,003), Peru (1,500), Paraguay (1,166), Uruguay (1,500), Brazil (1,497), Venezuela (1,500), Argentina (1,486), and the Dominican Republic (1,507). Chile was also surveyed, but no question on protest participation was asked.

[36] Machado, Scartascini, and Tommasi (2009) explore this issue in more detail and provide a contrast with the literature on post-materialist protests in OECD countries where individuals more likely to protest are also more likely to use more institutionalized channels of political participation.

**Figure 8. Congress or the Street?(17 Latin American Countries, 2008)**




The independent variables are the expected determinants of individual participation in protests. Some of those individual-level explanatory variables were chosen based on the literature on protest participation (surveyed in Machado, Scartascini and Tommasi, 2009). We additionally included the country-level institutional variables explained in Section 5.1 above.

We estimated a random intercepts logit estimation including country level covariates, and we obtained very similar results using the pooled specification with clustered jack-knife standard errors, which we omit due to space limitations. Table 2 summarizes for 17 countries the analysis for the dependent variable *reported participation in protest*. (The details of the estimation are provided in Machado, Scartascini and Tommasi, 2009). The explanatory variables below the red line are the individual-level variables, most of which take the expected signs and significance.[37] Of more direct interest

[37] The cases where the results of the pooled data are a bit more surprising can be better understood by running the model for each individual country. Sometimes an insignificant coefficient in the pooled data masks a mix of positive-and-significant and negative-and-significant coefficients at the country level. An interpretation of

for this paper are the country-level covariates (above the line). Except for ratings of the quality of the bureaucracy, all proxies of the functioning of institutions have a negative and significant estimated effect on the likelihood of protest participation. The results indicate that stronger institutions and less biased policies are associated with a lower tendency to use the alternative political technology of protests.

this country-level variation is provided in Machado et al. (2009) and it is broadly consistent with the general logic of this paper. Countries with better institutions present patterns of protest participation somewhat different from countries with very poor institutions.

## Table 2. Who Protests? Individual-Level Data

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Congress Capabilities | -0.762*** | | | | |
| | (0.273) | | | | |
| Judicial Independence | | -0.206*** | | | |
| | | (0.066) | | | |
| Parties Index | | | -0.182** | | |
| | | | (0.088) | | |
| Bureaucracy Index | | | | -0.174 | |
| | | | | (0.246) | |
| Institutional Stregth Index | | | | | -0.398*** |
| | | | | | (0.126) |
| Respect Institutions | -0.032** | -0.031** | -0.032** | -0.032** | -0.031** |
| | (0.014) | (0.014) | (0.014) | (0.014) | (0.014) |
| Parties Represent | 0.016 | 0.017 | 0.016 | 0.016 | 0.017 |
| | (0.016) | (0.016) | (0.016) | (0.016) | (0.016) |
| Experience with Corruption | 0.276*** | 0.276*** | 0.277*** | 0.277*** | 0.276*** |
| | (0.037) | (0.037) | (0.037) | (0.037) | (0.037) |
| Interpersonal Trust | 0.144*** | 0.144*** | 0.144*** | 0.144*** | 0.144*** |
| | (0.030) | (0.030) | (0.030) | (0.030) | (0.030) |
| Vote for Opponent | 0.284*** | 0.281*** | 0.286*** | 0.284*** | 0.281*** |
| | (0.059) | (0.059) | (0.059) | (0.059) | (0.059) |
| Extreme Ideology | 0.070*** | 0.070*** | 0.071*** | 0.071*** | 0.070*** |
| | (0.017) | (0.017) | (0.017) | (0.017) | (0.017) |
| Interest in Politics | 0.404*** | 0.403*** | 0.404*** | 0.403*** | 0.403*** |
| | (0.028) | (0.028) | (0.028) | (0.028) | (0.028) |
| Understand Politics | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 |
| | (0.016) | (0.016) | (0.016) | (0.016) | (0.016) |
| Age | 0.000 | 0.000 | 0.000 | -0.000 | 0.000 |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Male | 0.111** | 0.110** | 0.111** | 0.111** | 0.110** |
| | (0.051) | (0.051) | (0.051) | (0.051) | (0.051) |
| Education | 0.055*** | 0.055*** | 0.055*** | 0.055*** | 0.055*** |
| | (0.007) | (0.007) | (0.007) | (0.007) | (0.007) |
| Log(Income) | 0.011 | 0.012 | 0.011 | 0.011 | 0.012 |
| | (0.024) | (0.024) | (0.024) | (0.024) | (0.024) |
| Constant | -2.506*** | -3.530*** | -2.961*** | -3.821*** | -3.536*** |
| | (0.611) | (0.284) | (0.596) | (0.466) | (0.281) |
| Observations | 13968 | 13968 | 13968 | 13968 | 13968 |
| R-squared | . | . | . | . | . |
| Number of pais | 17 | 17 | 17 | 17 | 17 |

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

Standard errors in parentheses

### *5.3. Narrative of an Equilibrium Switch: Bolivia (1982-2009)*[38]

Bolivia, like most of Latin America, returned to democratic rule in the 1980s, following a history of short-lived democratic experiences interrupted by military dictatorships. In the words of Fabrice Lehoucq "although the history of Bolivia is filled with extra-constitutional seizures of power and military governments, by the mid-1980s it had become a stable country. Political succession had become orderly with the 1985 election of the MNR's leader Victor Paz Estenssoro." "Paz's final presidency marked the beginning of fifteen years of stable democracy" (Lehoucq, 2008: 112).

Not only did the general notion of democracy as acceptance of electoral results begin to take hold, but there was also an increased and strengthened role for some specific institutional arenas such as political parties and Congress. "Both left and right in the country's multiparty system agreed to abide by election results, no matter how unpalatable these might be" (Lehoucq, 2008: 113). "During the 1980s and 1990s traditional political parties played the most important role in the policymaking process . . . . After the recovery of democracy in 1982, the Legislative branch played a paramount role in Bolivia" (Jemio et al., 2009: 19).

Anyone who follows international news would immediately recognize that somewhere along the line over the last decade this process of institutionalization came to a halt and, furthermore, it has reversed dramatically. More directly to the point of this paper, the Bolivian political and policymaking process has moved "from Congress to the streets." According to Jemio, Candia and Evio,

> it is evident from the discussion above that the policymaking process in Bolivia has experienced dramatic shifts over time. Traditional political parties have lost legitimacy and representation, and social movements have become paramount players in the policymaking process. Regional organizations and regional governments have also acquired a significant leverage in the policymaking process. Congress has also experienced a

[38] This section draws extensively from Jemio, Candia and Evio (2009), Lehoucq (2008), and Evia, Laserna, and Skaperdas (2008). Actually, the connection between this paper and the Bolivian evidence runs both ways: it was our reading of the Bolivian experience what gave us the final push to write the paper. We are indebted to Luis Carlos Jemio (former Finance Minister of Bolivia) and to Fabrice Lehoucq (one of the foremost experts on Bolivian politics in US academia) for valuable discussions of the Bolivian case. They are not responsible for our (possibly faulty) interpretation of the case.

> significant lost of legitimacy as a key arena in the policymaking process. The streets on the other hand seem to have an upper hand in influencing the policymaking process . . . . Finally, the representative democracy system has lost ground to a more participative and direct type of democracy, where currencies such as the "cabildo," the referendum and the assembly are dominant in the policymaking process.

The above description of the changes in the Bolivian policymaking process seems quite consistent with a switch from a more institutionalized to a less institutionalized equilibrium according to the logic of this paper. Furthermore, various details of this process also seem consistent with the details of our model.

According to the model, one of the factors likely to lead to people taking the streets as opposed to investing in playing within institutions is the perception that the institutionalized system generates results biased against their interests. According to Jemio, Candia and Evio (2009):

> exclusion was a norm for organizing ruling coalitions that were not infrequently fraught of corruption[39] . . . . As Congress and political parties lost their representativeness of the population, citizen's organizations were active and vocal in channeling their demands. These organizations were not part of the national policymaking process . . . . Therefore their voice was only heard when they exerted some sort of pressure. . . . Road blockades, strikes, marches, hunger strikes, were the means by which these organizations fought and attained their objectives. These mechanisms have proven to be increasingly effective to the point of almost replacing the formal policymaking process.

The latter statements reflect the increased collective action of alternative political organizations, the lowering of participation costs in the street, and the increased used of these alternative venues to pressure for policy benefits.

[39] See the extension in the next section to the alternative political technology of bribes, where we predict that more extensive use of this technology (more bribes, i.e., more corruption) is likely to lead to more protests and to lower institutionalization.

All this complex process which we have very sketchily and selectively described (we refer the reader to Jemio, Candia and Evio, 2009; Lehoucq, 2008, and Evia, Laserna and Skaperdas, 2008, for much richer treatments and further references), is not without costs. Among the various costs and threats that the Bolivian polity faces in its current state, we highlight one of particular relevance for the general point of this paper: these new arenas are far worse than others for internalizing long-term agreements and objectives. In the words of Jemio, Candia and Evia: "Policy objectives have become essentially short-sighted and productivity goals have been largely neglected."

## 6. An Extension: More than One Alternative Political Technology

The alternative political technology we have explicitly emphasized in the paper is a labor-intensive one that seems to "favor" the poor and politically excluded. Even within the narrow confines of our model, however, that is not necessarily the only possible interpretation, since what the model really says is that those who are underrepresented in formal political institutions *vis-à-vis* their capacity for alternative political action are likely to undertake such actions. As suggested by the example of Argentina mentioned above, those actors are not necessarily the economically excluded. In the case of Argentina one of the most vocal actors in "the street" have been middle class and upper middle class agricultural producers who tend to be underrepresented in the Argentine political system due to some peculiarities of its federalism (Tommasi, 2006, 2008 and references therein), and that have "somehow" recently found their way into collective action on the roads.[40] This suggests that the bare formulation of the APT in our model is indeed more generally applicable than it seems at first glance.

Nonetheless, an interesting extension would consist of a richer set of APTs with different types of socioeconomic actors having differential access to each of the technologies. One technology used extensively throughout the world and in Latin America is the one that gives some particularly well-placed or well-endowed actors privileged access

[40] Similar cases are those of truck drivers in France, or trade unions more generally. Trade unions in Latin America tend to represent not the lowest quintiles of the income distribution but the mid and in some cases even upper quintiles (Schneider and Karchner, 2007; Saavedra and Tommasi, 2007), and they are certainly political actors with privileged access to some traditional but also to some alternative political technologies. (As mentioned in Section 7, their access to *de jure* political power might well be a historical response to their *de facto* political power, along the lines of Acemoglu and Robinson, 2005, as described by Collier and Collier 1979).

to the policymaking process. Such technology ("bribes"), unlike the one modeled so far, seems to be the realm of the rich.

In a companion paper (Scartascini, Tommasi and Trucco, 2009) we are working on an extension in which there are two APTs: bribes and road blockades. One of the main intuitions that is emerging from that ongoing exercise is the presence of a strategic complementarity between the use of bribes and the use of road blockades. In one simple formulation we have already worked out, bribes operate as a wedge that lowers the value of what is obtained through institutional channels, inducing substitution towards the street (as will be induced by any cost, say agency cost, of using formal institutions). Another route that we are still exploring emphasizes the asymmetry of access to this bribe technologies; in reduced form this seems to have the same effects as a more uneven distribution of *de jure* political power, which we have already shown to increase action in the streets. In that way, we can see "bribes by the rich" and "protests by the poor" as countervailing forces that tend to happen together in polities with weaker political institutions.[41]

Such an extension generates empirical correlations similar in spirit to the ones presented in Section 5. We expect bribes to be positively correlated with the use of other alternative political technologies such as protests, and negatively correlated with the strength of institutions. Figures 9 and 10 show some correlations generated with similar data and procedures as those described in Section 5. The proxies for bribes we are using are various measures of (high level) corruption as reported by Transparency International, the International Country Risk Guide, the Global Corruption Barometer, and the World Economic Forum. Similar patterns are found with the individual level data; for instance Table 2 shows that a higher perception of corruption increases the likelihood of protest. The remark about the fact that we are not the first to identify these correlations and about the insufficient evidence on causality also applies, but it is still encouraging that our model is consistent with these factual correlations.

[41] Some of these results are proven in Trucco (2009).

**Figure 9. Correlation (Corruption, Protests)**

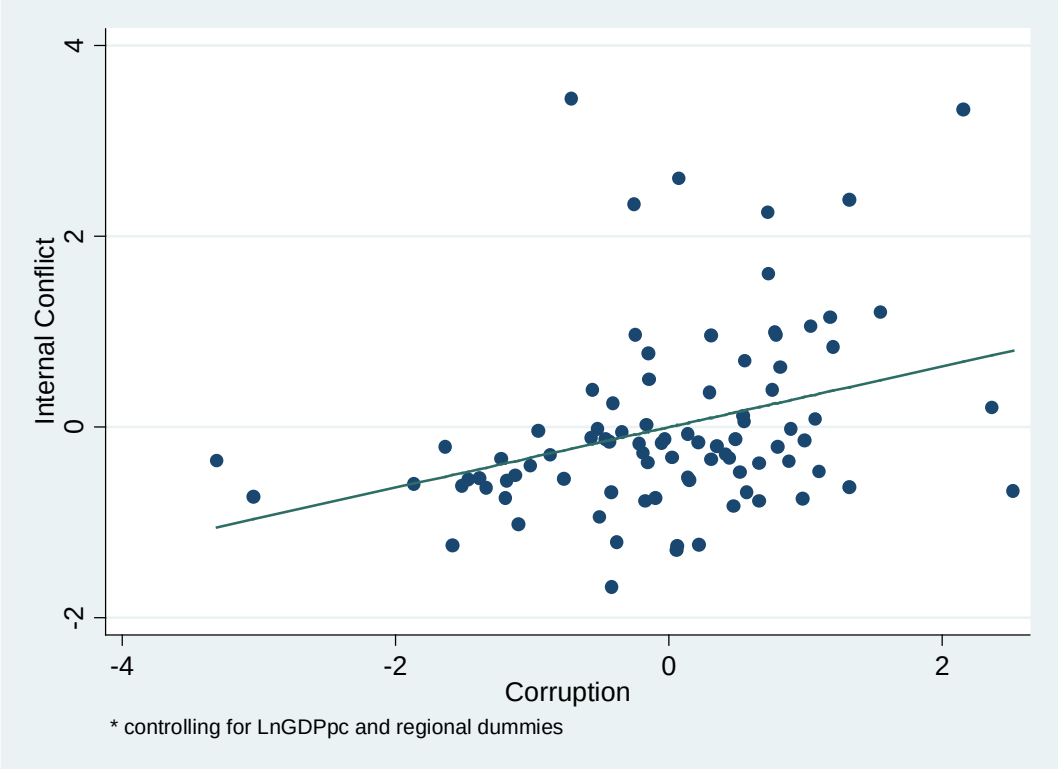
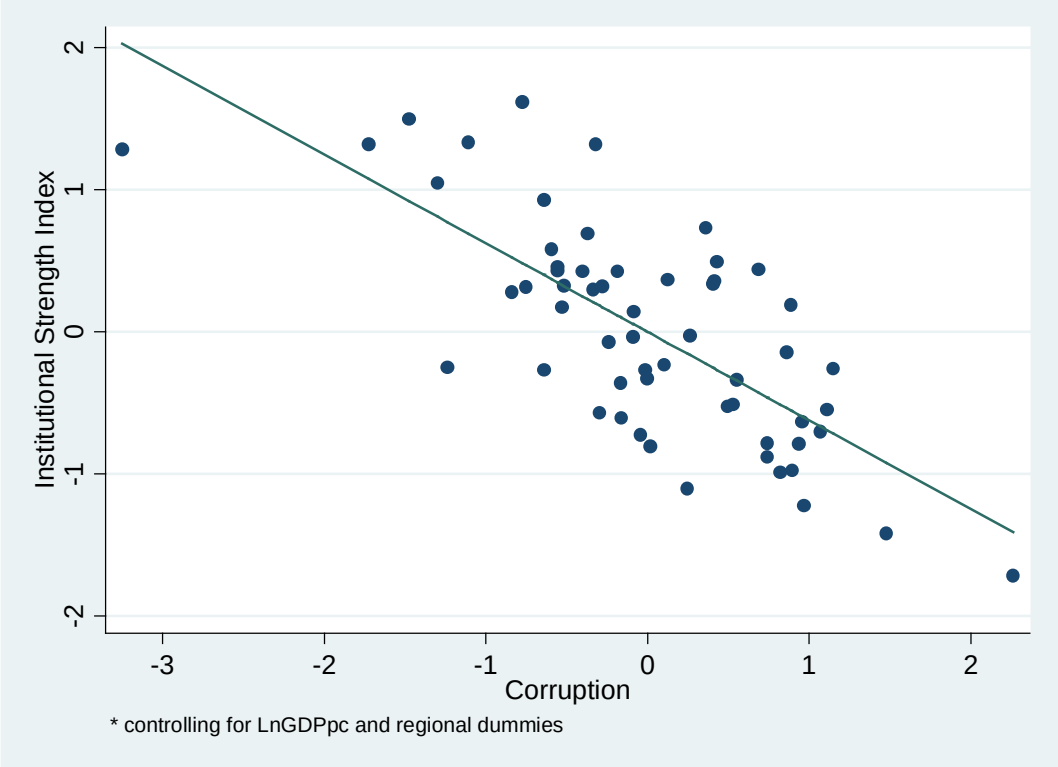



**Figure 10. Correlation (Corruption, Institutional Strength)**



## 7. Conclusion

The objective of this paper is to suggest a framework (a modeling strategy) to articulate insights from the rich literature on the effects of political institutions on policy into a broader view of policymaking, by endowing political actors with a larger action space. Such an effort could prove particularly useful for the study of policymaking in developing democracies, as well as for integrating such analyses across countries of different levels of economic and institutional development.

The framework we suggest allows generating comparative statics predictions from economic structure, formal political rules, and alternative political technologies, to the workings of institutions, the use of alternative political technologies, and policy outcomes. The model presented in this paper has the following implications.

1. Different countries have different degrees of institutionalization in their policymaking process.
2. There is multiplicity of equilibria. This allows: similar countries to be stuck at different levels of institutionalization, self-reinforcing dynamics, as well as the possibility of equilibrium switches (as the one documented for the Bolivian case).
3. The possibility of institutionalized policymaking increases as the cost of alternative political actions increases, as the damage these alternatives can cause decreases, and as the economy becomes wealthier.
4. In cases in which the distribution of *de jure* political power is very asymmetric, it is more likely to observe use of alternative political technologies as well as low degrees of institutionalization.
5. High costs or inefficiencies (for instance due to agency problems) in the use of formal political institutions can lead to the use of alternative political technologies as well as to low degrees of institutionalization.
6. There are some strategic complementarities across the use of different alternative political technologies. For instance, the use of bribes by the rich is likely to occur at the same time as the use of street demonstrations by the poor.

There are various pending tasks in the agenda described in the paper. Many of them consist of enriching various aspects of the model to permit comparative static exercises on economic structure, alternative political technologies, and formal political institutions. To begin with, one can give more detailed structure to the economy and/or more specific characteristics to the actors in the policy game game. One set of actors of special relevance might be, for instance, trade unions, which would be associated with a particular set of institutionalized and non-institutionalized technologies. The choice of a more or less institutionalized strategy might depend on the advantages offered by each course of action, as a function of formal political institutions and of the space of feasible mappings from policy to utilities of their members (Murillo and Schrank, 2009).

In our description of alternative political technologies so far, we have presented a fairly "flat" topography. In reality, the costs and potential effects of various forms of collective action are distributed in much more specific manners. For instance, the various $c(i)$'s of different actors could be a function of who else is participating in that activity, facilitating collective action across particular sets of agents, such as urban consumers or workers in sectors with high "damage capacity," among others. More generally, there are various structural, historical, and perceptual factors that affect specific forms of collective action such as protests.[42]

Perhaps the most natural set of extensions would come from fishing in the abundant pond of formal models of political institutions for various aspects which might allow for richer institutional comparative statics. For instance, what would be the effect of alternative electoral rules (proportional versus majoritarian) on the degree of institutionalization of policymaking?[43] What would be the effect of alternative regime types (parliamentary of presidential) on the degree of institutionalization of policymaking?

In order to answer such questions, one will need to move in the direction of representative democracy, with models that permit exploring the electoral connection and

[42] $c(i)$'s as well as potential rewards from such activities will be a function not only of who else protests, but also of the history of organization of such movements (as seen in the Bolivian case), and of the beliefs about the legitimacy of the protest by other actors who might matter for the degree of repression. That is, for instance, why some forms of protest in France are very common, while others are quickly repressed.

[43] One might hypothesize that proportional representation systems, by allowing a better representation of minorities might lead to more symmetric distributions of *de jure* political power and hence to more institutionalized behavior. For instance, unions are known to make less frequent use of strikes in such systems. On related issues, see Cusack, Iversen and Soskice (2007).

agency issues. Citizen-candidate models *a la* Besley and Coate (1997) or Osborne and Slivinski (1996) might constitute a natural step in that direction.

An exercise which could be attempted and that is close in spirit to the main points of this paper would be to study "hyperpresidentialism as an equilibrium." Hyperpresidentialism is an important concern of political scientists about the tendency of presidents in Latin America, Russia, and other developing presidential democracies to over-stretch their formal powers and to govern with little consideration for the legislative (and often judicial) branches. Some of the logic developed here (and in line with well-known work by Weingast, 1997) might be used to study that tendency as something happening in weakly-institutionalized equilibria, in such a way that an identical set of formal rules might lead to different forms of equilibrium behavior.[44]

From our logic of equilibria with different degrees of institutionalization, there might be important considerations for the econometric analysis of the effects of constitutional rules on policymaking and performance. Even beyond the very relevant issues of measurement and methodology raised in Persson and Tabellini (2003), Acemoglu (2005), and elsewhere, the logic of this paper sheds some new light (and possible shadows) on such exercises. It might be the case that the effects of constitutional rules on policymaking and performance will be conditional on the type of equilibrium achieved by each polity. The standard literature gives a number of predictions that are conditional on the fact of being at a full institutionalization equilibrium. Each such prediction needs to be explored under the assumption of being in a low institutionalization equilibrium. Then, one needs to consider the possibility that the parametric changes implicit in the comparative statics might lead to equilibrium switches. How to take such more involved predictions to econometric analysis is an issue that exceeds what we can say now, but that is worth exploring in future work. "Institutionalization" variables like the ones described in Section 5 (and more fully in Scartascini et al 2009) might become handy in such efforts.

The model and logic we have presented here has treated constitutional rules as exogenous, a natural first modeling step (Diermeier and Krehbiel, 2003). This can be embedded in a richer game in which such rules are chosen at an earlier stage, having our

[44] Saiegh (2009) shows varying degrees of importance of Congress in policymaking in different Latin American countries. As suggested in IDB (2005), the tendency of the executive to attempt to govern without Congress is not monotonically related to legislative powers of the president or other constitutional features.

model here as a continuation subgame. Such modeling strategy would be quite complementary to the Acemoglu-Robinson (2005) logic, providing a bit more structure to their (unmodeled) threat of collective action due to temporary *de facto* power.[45]

[45] As highlighted earlier such logic could be applied to study the distribution of *de jure* political power of fairly specific socioeconomic actors or organized groups such as trade unions. See also Boix (1999) and Cusack, Iversen and Soskice (2007).

# Appendix

### *A.1 The Game*

There are $n$ risk-neutral players. The set of players is $\mathcal{N} = \{1,2,\dots n\}$. The economy is subject to the aggregate constraint $\sum_{i=1}^{n} x_i \leq X$. Each player maximizes his piece of the pie $x_i \geq 0$, net of a possible cost $c$ that they pay in some cases. Each agent is endowed with $p_i$ units of *de jure* political power, with $p_i < p_{i+1}$, and $\sum_{i=1}^{n} p_i = 1$. The timing of the game is as follows.

Stage 1: Each player (simultaneously) chooses an action $a_i \in \{0,1\}$, where $a_i = 1$ means going to Congress, and $a_i = 0$ means going to the street; which carries a cost $c$. Let $m$ be the number of players who go to the street, and $n - m$ the number of players who go to Congress. Let $\mathcal{M}$ denote the set of players in the street, and $\mathcal{N} \backslash \mathcal{M}$ the set of players in Congress.

Stage 2: Among those that went to Congress, Nature will choose an agenda setter $\mu$. Each player $i$ in Congress will have a probability $\frac{p_i}{\sum_{j \in \mathcal{N} \backslash \mathcal{M}} p_j}$ of being recognized as the agenda setter.

Stage 3: Assumption A1: The $m$ players in the street become a unitary actor, "The Street."[46] Assumption A2: The Street splits whatever it receives equally among its members. Assumption A3: The Street is endowed with a commitment technology; the players in the street can (credibly) threaten to cause damage $d$ as a function of the share $z$ of the total pie received by each of them. Let $T \geq 2$ be threshold of critical mass for action in the street. If $m < T$, the amount of damage they can cause is zero, that is $d(z) = 0$ for all $z$. If $m \geq T$, $d(z)\colon [0,1] \to \{0, K\}$. Let $d(z) \epsilon \mathcal{D}$, where $\mathcal{D}$ is the set of functions mapping $[0,1]$ onto $\{0, K\}$.[47] (We assume for brevity that the range of the damage function can only take discrete values $0$ or $K$, but nothing of substance will change if we let a continuous range $d \in [0, K]$.)

Stage 4: After listening to the threat of The Street, the agenda setter in Congress ($i = \mu$) proposes an allocation, a vector of shares $S^{\boldsymbol{\mu}} = \left\{s_i^{\boldsymbol{\mu}}\right\}_{i \in \mathcal{N}}$, subject to $\sum_{i=1}^{n} s_i \leq 1$ and

[46] In the text of the paper we use $Z = mz$ to denote the total amount received by all those in the street.

[47] If nobody goes to the street ($m = 0$), this stage becomes irrelevant (as does stage 6), and the game reduces to a traditional legislative bargaining game with only stages 2, 4, and 5. (Stage 7 trivially implements what is decided in 5).

$s_i \in [0,1]$; that is, $S^{\boldsymbol{\mu}}(d): \mathcal{D} \to \Delta^n$. For brevity we introduce the ex post distributional assumption A2 as an ex ante constraint on the agenda setter's proposal, by requiring at this stage that $s_i^{\boldsymbol{\mu}} = z^{\boldsymbol{\mu}}$ for all $i \in \mathcal{M}$.

Stage 5: The $n-m$ players in Congress vote on $S^{\boldsymbol{\mu}}$. Let $\phi_i \in \{0,1\}$ denote the voting choice of legislator $i$, where 0 and 1 respectively represent voting against and for the agenda setter's proposal. We will assume that legislators vote only on the basis of their individual share, so that $\phi_i(s_i): [0,1] \to \{0,1\}$. To avoid some sources of multiplicity not germane to the objectives of this paper, we assume that in case of indifference, $\phi_i = 1$ (assumption A4).[48] The outcome of the legislative process, $S$, will be:[49]

$$S = \begin{cases} S^{\boldsymbol{\mu}} & if \sum_{i \in \mathcal{N} \setminus \mathcal{M}} \phi_i \geq \frac{1}{2}(n-m) \\ \{s_i = 0\}_{i \in \mathcal{N}} & if \sum_{i \in \mathcal{N} \setminus \mathcal{M}} \phi_i < \frac{1}{2}(n-m) \end{cases}.$$

Stage 6 (from the text) is mechanically implemented given our commitment assumption.

Stage 7: The allocation is implemented. If no damage was caused, each player receives $x_i = s_i X$. If damage was caused, each player receives $x_i = s_i(X-K)$. The parameters of the game are $n, X, K, T, c, \{p_i\}_{i=1}^n$.

[48] In this way we get rid of two sources of multiplicity. On the one hand, we are considering only equilibria in which voters do not choose weakly dominated strategies, having them always act as if they were pivotal. On the other hand, we make the payoff given to members of the winning legislative coalition converge to their status quo payoff.

[49] Nothing of substance will change if we let the legislative status quo vector of shares be non-zero. This could be an additional source of heterogeneity, all of which is captured here in an ex ante sense by the vector of $p_i$'s.

### *A.2 Solution of the Game*

Let Γ denote a partition of the set of players into $\mathcal{M}$ and $\mathcal{N}\backslash\mathcal{M}$. Take any Γ and any realization of the agenda setter $\mu$ consistent with that Γ, and call $G(\Gamma,\mu)$ the game from stage 3 onwards with partition of players Γ and agenda setter $\mu$. The equilibrium play of that game will generate payoffs $V_i(\Gamma,\mu)$ for each player $i$. We will solve the game in two steps: first we will find the (subgame perfect) equilibrium for any $G(\Gamma,\mu)$, and then we will find Nash equilibria to the venue choices of all players in stage 1, having the expected values over $\mu$, $V_i(\Gamma)$, as continuation payoffs. We focus on pure strategies throughout.

*Step 1. Solving* $G(\Gamma,\mu)$.

$\left\{d^*(z), S^{\boldsymbol{\mu}*}(d), \left\{\phi_j^*\left(s_j^\mu\right)\right\}_{j\epsilon\,\mathcal{N}\backslash\mathcal{M}}\right\}$ constitute a Subgame Perfect Equilibrium for $G(\Gamma,\mu)$ if:

1. For all $d(z)$, $S^{\boldsymbol{\mu}}$:

   $\phi_i^*\left(s_i^\mu\right)$ maximizes payoffs to $i$, given $\left\{\phi_j^*\left(s_j^\mu\right)\right\}_{j\epsilon\,\mathcal{N}\backslash\mathcal{M}\backslash\{i\}}$, for all $i\epsilon\mathcal{N}\backslash\mathcal{M}$.

2. Given $\left\{\phi_j^*\left(s_j^\mu\right)\right\}_{j\epsilon\,\mathcal{N}\backslash\mathcal{M}}$, for all $d(z)$:

   $S^{\boldsymbol{\mu}*}(d)$ maximizes payoff to the agenda setter μ.

3. Given $\left\{\phi_j^*\left(s_j^\mu\right)\right\}_{j\epsilon\,\mathcal{N}\backslash\mathcal{M}}$, $S^{\boldsymbol{\mu}*}(d)$:

   $d^*(z)$ maximizes payoffs to The Street.

We solve $G(\Gamma,\mu)$ by backward induction from stage 5 to stage 3.

Stage 5: given the status quo payoffs of zero, assumption A4 assures that any proposal greater or equal to zero will be accepted by all members of Congress. This implies

$$S = S^\mu. \tag{1}$$

Stage 4: given (1), $s_i^{\boldsymbol{\mu}} = 0\ \forall i \in \mathcal{N}\backslash\mathcal{M}\backslash\{\mu\}$, since the agenda setter will try to keep as much of the pie as possible for himself. With regards to how much to give to The Street, the decision depends on the number of players in the street, as well as on the amount they request. In case of $m < T$, given that $d(z) = 0\ \forall z$, there is no reason to give anything to the street, and $z^\mu = 0$. If $m \geq T$, then the amount given to The Street by the agenda setter will depend on the $d(z)$ function. The agenda setter will pick the lowest $z$ such that

$d(z) = 0$, and compare giving that $z$ to all players in the street, to giving them 0 and suffering the damage $d(0)$. Hence, the setter's problem consists of

$$\max_z \{\{1 - m \times \hat{z}\}X, X - d(0)\}, \tag{2}$$

where $\hat{z} = min\{z | d(z) = 0\}$.

Stage 3: (The problem for The Street is trivial when $m < T$; we focus on the case $m \geq T$.) The Street's problem consists of maximizing $z$ subject to (2). Given that in the second option they get zero, their problem reduces to announcing a function $d(z)$ that: (i) minimizes $X - d(0)$: and (ii) minimizes $\{1 - m \times \hat{z}\}X$, subject to $\{1 - m \times \hat{z}\}X \geq X - d(0)$. (i) implies $d(0) = K$. (ii) implies $\frac{K}{mX} = \hat{z}$. Any function $d(z)$ that satisfies those two conditions constitutes a solution to The Street's problem. For brevity we focus on

$$d(z) = \begin{cases} K \ for \ z < \frac{K}{mX} \\ 0 \ for \ z \geq \frac{K}{mX} \end{cases} \tag{3}$$

The above reasoning can be summarized in the following Lemma.[50]

*Lemma 1: under the maintained assumptions of the model, subgame perfect equilibria to G(Γ,μ) will imply the following equilibrium play:*

*(a) If m<T:*

- *The Street announces anything.*
- *The agenda setter proposes* $S^{\mu} = \{s_i^{\boldsymbol{\mu}}\}_{i \in \mathcal{N}}$ *such that*

$$s_i^{\mu} = \begin{cases} 1 & i = \mu \\ 0 & i \neq \mu \end{cases} \tag{4}$$

- *All players in Congress accept the proposal.*
- *No damage is caused.*
- *The allocation is*

$$x_i = \begin{cases} X & i = \mu \\ 0 & i \neq \mu \end{cases}$$

*(b) If m≥T:*

- *The Street announces (3).*

[50] In the case in which $m = n$, there will be no one in Congress; but it is easy to see that $m = n$ cannot happen in equilibrium, since in that case any player switching venues would become the agenda setter and increase his payoff.

- *The agenda setter proposes* $S^{\boldsymbol{\mu}} = \{s_i^{\mu}\}_{i\epsilon\mathcal{N}}$ *such that*

$$s_i^{\boldsymbol{\mu}} = \begin{cases} 1 - {}^{K}/_{X} & i = \mu \\ 0 & i \in \mathcal{N}\backslash\mathcal{M}\backslash\{\mu\} \\ {}^{K}/_{mX} & i \in \mathcal{M} \end{cases} \quad (5)$$

- *All players in Congress accept the proposal.*
- *No damage is caused.*
- *The allocation is*

$$x_i = \begin{cases} X - K & i = \mu \\ 0 & i \in \mathcal{N}\backslash\mathcal{M}\backslash\{\mu\} \\ {}^{K}/_{m} & i \in \mathcal{M} \end{cases}$$

From Lemma 1 it is easy to compute the continuation values of the different configurations of venue choices in stage 1, before $\mu$ is realized in stage 2. These expected values from venue choice $a_i$ , as a function of all other players' choices $\boldsymbol{a_{-i}}$ ,will constitute the elements of the payoff matrix of the stage 1 game.

*Step 2. Nash Equilibria of Stage 1 Game.*

There are two types of equilibria in this game: (a) ***Full Institutionalization Equilibria*** (FIE) in which all players choose to go to Congress and a standard Baron-Ferejohn game results from stage 2 onwards, and (b) ***Low Institutionalization Equilibria*** (LIE) in which $m^* > 0$ players go to the street. In the next step we show that a FIE exists for all parameter values under our maintained assumptions. After that, we analyze Low Institutionalization Equilibria.

It is easy to see that if everybody is in Congress, nobody wants to deviate from that, for all the feasible parameters of the game. If everybody was in Congress, and one player was to deviate and go to the street, the number of players in the street would be one, which is smaller than $T$ and hence insufficient to produce any damage. The allocation resulting from that path will lead to $s_i = 0$ for the deviating player. His payoff in the street will then be equal to $-c$, while his expected payoff in Congress would have been $p_i X$. This deviation is never profitable. (Notice that the continuation of the game in this type of equilibrium is as specified in part (a) of Lemma 1).

We now proceed to characterize Low Institutionalization Equilibria. Let $\Gamma^*$ denote a partition being considered as possible equilibrium, with $\mathcal{M}^*$ its associated set (with measure $m^*$) of players in the street. In any LIE it has to be the case that no player in the street wants to switch to Congress and no player in Congress wants to switch to the street. It is easy to see from Lemma 1 that it is not possible to have a LIE in which $m^*<T$, since in such case players in the street would be receiving a payoff of $-c$, which would be dominated by the expected payoff in Congress to anyone switching. Hence in any LIE the continuation game has to be as specified in part (b) of Lemma 1.

For a partition to be an equilibrium one, it has to be the case that no player in Congress would rather be in the street. That is, $\forall i \in \mathcal{N}\backslash\mathcal{M}^*$:

$$(X-K)\left[\frac{p_i}{\sum_{j\in\mathcal{N}\backslash\mathcal{M}^*} p_j}\right] \geq \frac{K}{m^*+1} - c,$$

which implies

$$p_i \geq \frac{\sum_{j\in\mathcal{N}\backslash\mathcal{M}^*} p_j}{(X-K)}\left(\frac{K}{m^*+1} - c\right) \equiv p^L(\Gamma^*); \tag{6}$$

so that $p^L(\Gamma^*)$ constitutes the lowest possible $p_i$ that will rather stay in Congress for an arbitrary partition $\Gamma^*$. Condition (6) is necessary for $\Gamma^*$ to be an equilibrium partition.

A similar reasoning can be applied to players in the street, only that two situations have to be considered in that case, depending on whether the number of players in the street $m^*$ induced by $\Gamma^*$ is equal to or greater than $T$.

For $\Gamma^*$such that $m^* > T$ to be an equilibrium partition, it has to be the case that $\forall i \in \mathcal{M}^*$:

$$\frac{K}{m^*} - c \geq (\mathrm{X}-\mathrm{K})\left[\frac{p_i}{p_i + \sum_{j\in\mathcal{N}\backslash\mathcal{M}^*} p_j}\right],$$

which implies

$$p_i \leq \frac{\sum_{j\in\mathcal{N}\backslash\mathcal{M}^*} p_j\left(\frac{K}{m^*}-c\right)}{(\mathrm{X}-\mathrm{K})-\left(\frac{K}{m^*}-c\right)} \equiv p^U(\Gamma^*). \tag{7}$$

For $\Gamma^*$such that $m^* = T$ to be an equilibrium partition, it has to be the case that $\forall i \in \mathcal{M}^*$:

$$\frac{K}{T} - c \geq \mathrm{X}\left[\frac{p_i}{p_i + \sum_{j\in\mathcal{N}\backslash\mathcal{M}^*} p_j}\right],$$

which implies

$$p_i \leq \frac{\sum_{j \in \mathcal{N} \setminus \mathcal{M}^*} p_j \left(\frac{K}{T} - c\right)}{\mathrm{X} - \left(\frac{K}{T} - c\right)} \equiv p^U(\Gamma^*). \qquad (7')$$

The difference between (7') and (7) lies in the absence of the term $K$ in the denominator, since when $m^* = T$, anyone moving from the street to Congress will make The Street's threat of damage no longer feasible.[51]

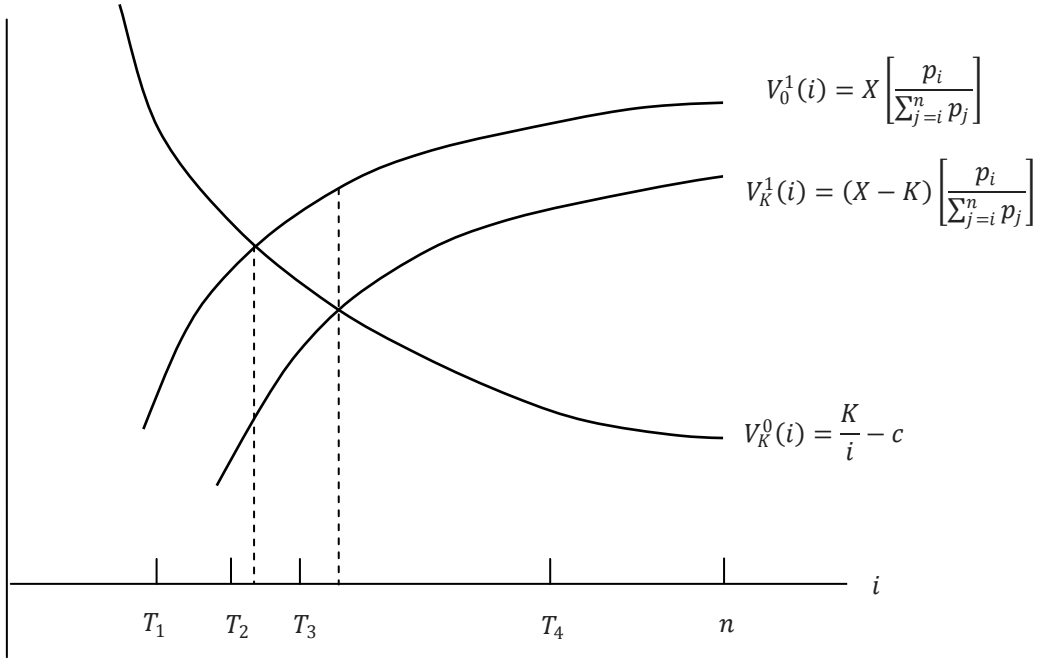
(6) and (7) are necessary and sufficient conditions for $\Gamma^*$such that $m^* > T$ to be an equilibrium partition. (6) and (7') are necessary and sufficient conditions for $\Gamma^*$such that $m^* = T$ to be an equilibrium partition.

These conditions allow for two types of LIE: one in which the partition is such that the greatest $i$ in $\mathcal{M}^*$ is smaller than the least $i$ in $\mathcal{N} \setminus \mathcal{M}^*$, that is all types in Congress are larger than all types in the street (call those LIE1); and one in which that condition is not satisfied (LIE2). In the rest of this appendix as well as in the text we focus on equilibria LIE1, and reserve the terminology LIE to refer to LIE1. Other than being more intuitive and allowing for a briefer exposition of the subsequent analysis, this choice can be justified by two results proven in an additional appendix, available upon request: (i) for any vector of parameters for which a LIE2 exists, there exists also a LIE1; and (ii) if we take two partitions $\Gamma$ and $\Gamma'$ with the same number of players in each venue ($m$ and $n - m$) that differ only on the venue choice of one player from each arena (say players $i$ and $j$ switch places), the sum of utilities of those two players will be higher in the partition in which the higher type is in Congress and the lower type is in the Street.

We analyze now the parameter values under which LIE exists. We can explain the results with the visual aid of Figure A-1. Let the horizontal axis represent $\mathbb{R}^+$ as well as the set of players $i$ ordered from 1 to $n$.

[51] The fact that the bound has the form $p_i \leq p^U$ depends on $(X - K) - \left(K/m^* - c\right) \geq 0$ for the $m^*$ of the partition under consideration. Otherwise the condition would be of the form $p_i \geq p^U$ with $p^U < 0$, so that nobody who has been assigned to the street would want to move, and we might have various ways of partitioning people across venues for some parameter values. All the logic of the analysis below goes through also in that case. In particular, see the distinction between LIE1 and LIE2 below: when selecting to focus on LIE1, we are leaving aside such sources of multiplicity.

**Figure A1. Low Institutionalization Equilibria**




$$T_1 < m^* \rightarrow \exists\ LIE$$
$$T_2 = m_2^* \rightarrow \exists\ LIE$$
$$T_3 = m_3^* \rightarrow \nexists\ LIE$$
$$T_4 > m^* \rightarrow \nexists\ LIE$$

Take any vector of all the parameters of the game except $T$. Let $V_D^a(i)$ represent the value of action $a \in \{0,1\}$ for player $i$ when potential damage is $D \in \{0, K\}$, under the assumption (from LIE1) that all players to his left are choosing the street ($a_j = 0\ \forall j < i$) and all players to his right are choosing Congress ($a_j = 1\ \forall j > i$). We have then

$$V_K^1(i) = (X - K)\left[\frac{p_i}{\sum_{j=i}^{n} p_j}\right]$$

$$V_0^1(i) = X\left[\frac{p_i}{\sum_{j=i}^{n} p_j}\right]$$

$$V_K^0(i) = \frac{K}{i} - c$$

$$V_0^0(i) = -c$$

The three first functions are plotted in figure A-1.[52] Let $m^*$ be the largest integer such that $V_K^0(\ \ ) \geq V_K^1(\ \ )$. The identification of the set of parameter vectors for which there is a LIE can be visualized by juxtaposing the parameter $T$ with the rest of parameters summarized in the functions plotted in Figure A-1. If $T < m^*$, then the threat of damage $K$ is credible, the relevant curve for the value of being in Congress is $V_K^1(i)$, and we have a LIE in which players 1 through $m^*$ go to the street and players $m^* + 1$ through $n$ go to Congress. If $T > m^*$, then the value of being in the street would be $V_0^0(i) = -c$, and that cannot be an equilibrium, as already stated. For $T = m^*$, the relevant comparison for the (now pivotal) player $i = T = m^*$ is between $V_0^1(i)$ and $V_K^0(i)$. If $V_0^1(i) \leq V_K^0(i)$, then he chooses the street and we have a LIE. If $V_0^1(i) > V_K^0(i)$, then he would choose Congress and we do not have a LIE.

We summarize the analysis in the following proposition, which is the more formal equivalent of (heuristic) Proposition 1 in the text.

*Appendix Proposition 1:*

*Let* $m^* \equiv \max\{i |\ i \in \mathcal{N}$ *and* $V_K^0(i) \geq V_K^1(i)\}$

*(a) A Full Institutionalization Equilibrium in which* $\mathcal{M}^* = \emptyset$ *and* $\mathcal{N} \backslash \mathcal{M}^* = \mathcal{N}$ *exists for all values of parameters.*

[52] The functions are written and plotted as continuous for expositional purposes, even though for a given set of $p_i$s they are discrete functions.

*(b) A Low Institutionalization Equilibrium in which* $\mathcal{M}^* = \{1,2,\dots m^*\}$ *and* $\mathcal{N}\backslash\mathcal{M}^* = \{m^*+1, m^*+2, \dots n\}$ *exists if T<*$m^*$ *or if T=*$m^*$ *and* $V_K^0(i) \geq V_0^1(i)$.

We have established conditions for the existence of LIE, in which players up to $m^*$ are in the street and players from $m^*+1$ are in Congress. In such cases, the equilibrium conditions $V^0(m^*) \geq V^1(m^*)$ and $V^1(m^*+1) \geq V^0(m^*+1)$ are satisfied. For simplicity, in any case of indifference we assign $m^*$ to the street and $m^*+1$ to Congress. Under those conditions $m^*$ is unique for any set of parameters for which LIE exists, which facilitates the comparative statics.

### *A.3 Comparative Statics*

We can use Figure A-1 to intuitively visualize comparative statics results from the parameters of the model to $m^*$. As asserted in the body of the paper, these comparative statics could be interpreted as referring both to the number of people in the street within a LIE, and to the possibility of existence of LIE (*vis-à-vis* FIE that always exists), where "possibility" is defined in terms of the size of the set of parameters (other than the one being changed) for which the conditions for existence of LIE are satisfied. First of all, it is clear that a larger $T$ makes LIE less likely. For all other parameters, we can see their effect by shifting the curves $V_K^0(i)$ and $V_K^1(i)$ in Figure A-1, and by noticing that the larger $m^*$, the weaker the requirements on all other parameters for the existence of LIE. It is easy to see that an increase in $c$ shifts $V_K^0(i)$ down, tending to decrease $m^*$, hence decreasing the possibility of LIE. Increasing $X$ has the same effect through an upward shift of $V_K^1(i)$. Decreasing $K$ also decreases both $m^*$ and the probability of LIE through leftward shifts in both curves.

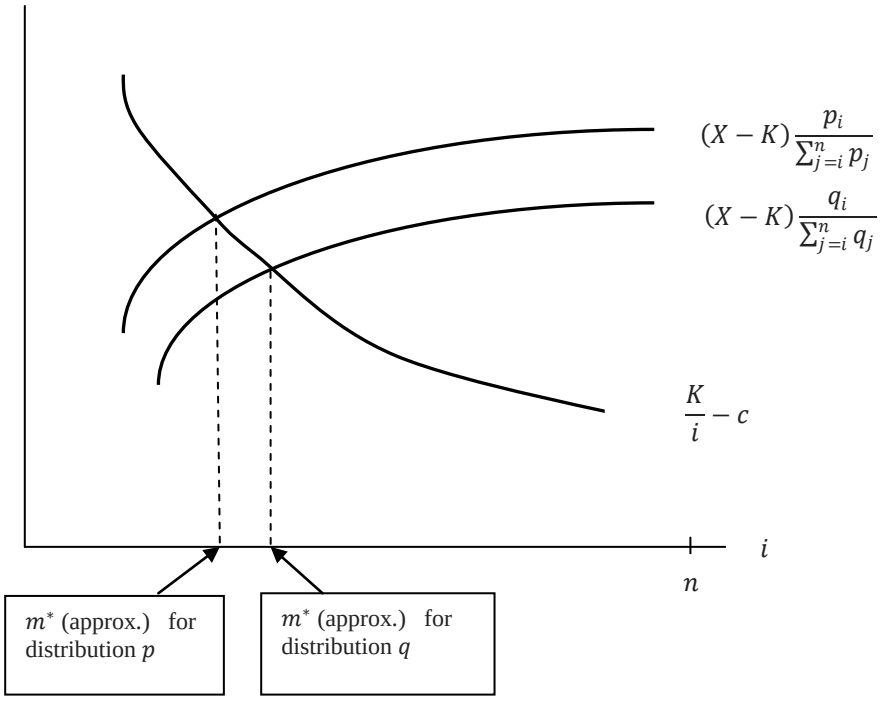
Comparative statics on the distribution of $p_i$s can be a bit more involved. Here we prove the effect of increasing the asymmetry of $p_i$s (or the inequality in the distribution of *de jure* political power) in a particular way. Let $P(i) = \sum_{j=i}^{n} p_j$ be the cumulative density function counting from $n$ to $i$. Notice that $P(i)$ decreases in $i$. Let $q$ be another distribution, with cumulative $Q(i) = \sum_{j=i}^{n} q_j$. For brevity and simplicity of exposition we will speak as if the functions where continuous, while the proper logic is the discrete equivalent of what we say. We will say that $Q(\cdot)$ is *more unequal* than $P(\cdot)$ if $Q(\cdot)$ is *equally or more elastic*

than $P(\cdot)$ for all $i$, and it is strictly more elastic for at least one $i$. This means that changes in $i$ lead to larger changes in the probability under $q$ than under $p$. Notice that this condition implies that $P(\cdot)$ first order stochastically dominates $Q(\cdot)$. We show that a more unequal distribution leads to more people in the street. $Q(\cdot)$ more unequal than $P(\cdot)$ implies

$$\left|\frac{\partial Q}{\partial i}\frac{i}{Q}\right| \geq \left|\frac{\partial P}{\partial i}\frac{i}{P}\right| \Rightarrow \frac{\partial Q}{\partial i}\frac{i}{Q} \leq \frac{\partial P}{\partial i}\frac{i}{P} \Rightarrow \frac{q_i}{Q(i)} \leq \frac{p_i}{P(i)} \Rightarrow \frac{q_j}{\sum_{j=i}^{n} q_j} \leq \frac{p_i}{\sum_{j=i}^{n} p_j}.$$

As we can see in Figure A-2, this implies that in the case of more unequal distribution of power, there will be more (or at least not fewer) people in the street.

**Figure A2. More Unequal Distribution $q$ Leads to Larger $m^*$**



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