



***"Veto Players and Policy Trade-offs. An Intertemporal Approach to
Study the Effects of Political Institutions on Policy"***

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Veto Players and Policy Trade-offs.

An Intertemporal Approach to Study the Effects of Political Institutions on Policy^{*}

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Abstract

The capacity to sustain policies over time and the capacity to adjust policies in the face of changing circumstances are two desirable properties of policymaking systems. The veto player approach has suggested that polities with more veto players will have the capacity to sustain policies at the expense of the ability to change policy when necessary. This paper disputes that assertion from an intertemporal perspective, drawing from transaction cost economics and repeated game theory and showing that some countries might have both more credibility *and* more adaptability than others. More generally, the paper argues that when studying the effects of political institutions on policy outcomes, a perspective of intertemporal politics might lead to predictions different from those emanating from more a-temporal approaches.

JEL Classification: D72, D78, H10, H50

Economists in several fields have been preoccupied for several decades with the problem of credibility of government policy. This is the case because it is well recognized that similar policies can produce different outcomes depending on the extent to which economic agents believe that the policy will be sustained. That is, regardless of its content, a policy can produce the desired outcomes only if it is *credible*. This concern for the impact of credibility has been very salient in the literature on macroeconomic policy that emphasizes the time inconsistent incentives of benevolent policymakers: even policymakers who attempt to maximize social welfare may choose to default on their promises and change policies later on.¹ The problem is even more pressing when more realistic assumptions about the motivations of policymakers are considered, when agency problems and conflict of interests (partisan politics) are taken into account. Once one goes beyond the view of government as a unified actor, the structure of political institutions becomes crucial for understanding the ability of governments to commit to any given policy direction. Various institutional arrangements have been identified as conducive to more credible economic policy. Sometimes it is the structure of the polity itself that makes policy change unlikely, as when there are many veto players. When that is not the case, there are alternatives for embedding policy rigidities or introducing specific procedural mechanisms to make policy change difficult. In this line of research, the ability of governments to change policy is feared, and the *stability* of policies is valued.

On the other hand, economists and other social scientists have also been concerned about the ability of governments to change policy when such policy change is deemed necessary. This issue, the capacity to adjust policy, has been central in the context of macroeconomic stabilization, of structural reforms in developing and transition countries, and in the context of welfare state retrenchment in developed economies. This capacity has been referred alternatively as *reform capacity*, *decisiveness*, *flexibility*, or *adaptability* (we will use this latter term). In this case also, different configurations of political institutions have been considered as more favorable for facilitating or denying the necessary policy change. For example, it is generally thought that a smaller number of veto players facilitate those required policy adjustments.

The capacity to change previous policies when necessary and the capacity to sustain policies when that is desirable are seen in various corners of the literature as conflicting objectives. One salient example of the perceived stability-adaptability trade off is provided by the literature on “Rules versus Discretion” in macroeconomics. *Rules* are a form of taking

discretion away from policymakers, a device thought to increase policy predictability and credibility, often at the cost of making it unresponsive to shocks.

Looking at the effects of political institutions on policy stability and policy adaptability, predominant views take for granted the presence of such a trade-off. A very well known corpus of comparative political analysis uses the logic of *veto player theory* and argues that polities with more veto players are expected (*ceteris paribus*) to be more able to commit to policy but less able to adapt their policies, and that the opposite is true for countries with fewer veto players.

Veto player theory is a line of inquiry, pioneered by George Tsebelis (1995, 2002), of great saliency in comparative politics. Veto player logic has been applied to the study of welfare states, inequality, government spending, fiscal adjustment, tax competition, monetary policy, monetary institutions, inflation, international trade arrangements, the business environment, the rule of law, European Union decision-making, and various other important issues.² A veto player is an actor whose consent is necessary to change policy. Any given constellation of veto players can be characterized by its number, the distribution of preferences, and the internal cohesion of collective veto players. Tsebelis places these configurations in a spatial representation and utilizes social choice concepts such as the size of the *unanimity winset* to derive predictions about the likelihood of policy change. Other things constant, a higher number of (effective) veto players imply a lower likelihood of policy change (more *policy stability* in the definition of Tsebelis).³

There are, then, two assertions that are implicit in much conventional wisdom and explicit in the veto player literature: (A1) *A more decisive polity must necessarily be less resolute* (Haggard and McCubbins, 2001: 6), or “*high level of commitment*” is another way of saying “*inability for political response*” (Tsebelis 2002: 204); and (A2) *as the effective number of veto players increases, the polity becomes more resolute and less decisive* (Haggard and McCubbins, 2001: 27), or equivalently, *many veto players make significant policy change difficult or impossible* (Tsebelis, 2002: xv).

In this paper we challenge *the generality* of those two assertions, doing so from a perspective that emphasizes the intertemporal nature of political exchanges and of policymaking. The more general point we want to stress, using veto player logic as an example, is that when studying the effects of political institutions on policy, an explicitly intertemporal perspective can lead to results different from those obtained from more a-temporal approaches.

Our initial motivation for challenging assertion A1 (a negative correlation between stability and adaptability) is empirical. Our observation of policymaking in various countries (especially within Latin America) suggests that in practice there does not always seem to be a trade-off between stability and adaptability (or in the words of Haggard and McCubbins, between resoluteness and decisiveness). In the same way that some individuals are more stable *and* more adaptable than others,⁴ we tend to observe some countries which have more of *both* policymaking capabilities. For instance, Chile is a country where policies are more credible than those in Argentina, while at the same time, Chile also seems better able to adjust its policies in response to shocks or to the failure of previous policies than its neighbor across the Andes.⁵

Figure 1 shows that in a cross section of countries we fail to observe the expected negative correlation between stability and adaptability. As shown in the Appendix, this result is robust to the way of measuring those variables and to the controls introduced.

<FIGURE 1>

Even though our motivation to quarrel with the generality of assertion A2 is more theoretical, some preliminary evidence provided in Figure 2 also seems to indicate that the correlations suggested by the veto player theory do not show up in cross-national data. Again, in Figure 2, using a measure of veto players created by Henisz (2000) and usually adopted in the literature, we fail to find a negative correlation between the number of veto players and the ability of countries to adapt their policies. Again, this results is robust to the indexes selected and the controls used (more on this in the Appendix).

<FIGURE 2>

1. The Framework

In this paper we follow Spiller and Tommasi (2003 and 2007) and Spiller, Stein and Tommasi (2008), as well as a vast literature in transaction cost and intertemporal economics and politics they draw from, and look at the policymaking process as a process of exchanges (transactions) over time. Different actors at different points in time might have different amounts of power to

influence the making of policy. The way they use that power can be very different if they behave as if there is no tomorrow than if they take into account the effects their current actions will have on future play of the game.

Seeing policymaking from this perspective opens up various channels which might lead to potential reversion of predictions, such as A1 and A2, obtained from perspectives that do not take such intertemporal channels explicitly into consideration. There are a number of theoretical mechanisms, reflecting characteristics of intertemporal politics in the real world, why such results might come about. A first step for any such mechanism to function is moving from one-period models of policymaking to multi-period models of policymaking.

In the example of Section 2, we show that prediction A2 of veto player theory obtains in a one-period model, but it is reversed in an extension to a two-period model if one adds the strategic possibility (relevant in practice, but irrelevant in a one-period model) of introducing policy rigidities (that is, designing policies in the present in such a way that it is very difficult to change them in the future). The example also brings home an important general point for the analysis of the effects of political institutions on policymaking and policy. Political institutions allocate decision power not only at a given point in time, but also over time. As an exercise in institutional comparative statics, “increasing the number of veto players” means comparing situations in which the number of veto players is larger not only at one point in time, but also in the future. The fact that there are “more seats” in the future affects the likelihood that any given current veto player might also be a veto player in the future, and this intertemporal consideration might provide incentives for “better” choices by veto players in the present. For instance, it may reduce their incentives to embed rigidities into future policies.

In the example of Section 3 we go all the way to an infinitely repeated game, a natural framework for the study of intertemporal policymaking. Within such a framework we show that cooperation in a repeated game context might permit some polities to have both more stability (avoiding opportunistic adjustments) and more adaptability (permitting efficient adjustments) than those polities which are unable to enforce cooperative policymaking, contrary to assertion A1 of veto player theory. We also show that more veto players might make the deviation from such cooperative equilibrium less appealing, and in that way more veto players might facilitate intertemporal cooperation and hence policy adaptability (contrary to assertion A2 of veto player theory).

The two examples, mean to highlight intertemporal channels affecting the effects of political institutions on policymaking and policies, share some common characteristics. [These are features of a framework suggested in Spiller and Tommasi (2007, Chapter 2) and applied here to veto player” (i.e., unanimity) decision rules.] There are a fixed number of political actors with different preferences over some policy vector. The economy is subject to shocks that call for policy adjustment, which is beneficial for all players. (Many relevant economic policies exemplify this situation, in which there is conflict of interests while at the same time there is a common interest in economic adjustment, with fiscal policy being the most obvious example.)⁶ The political power of different actors changes over time.⁷

Following the definition of veto players, political institutions are such that, at any point in time, the agreement of a (proper or not) subset of the players is necessary for policy to change. Veto players in each period will be those that get to seat at a table where unanimity is required in order to change policies. These seats (“veto gates” in the wording of Shugart and Haggard, 2001, and Cox and McCubbins, 2001) can be occupied by different players at different points in time.

Players in this intertemporal set up are all those who might occupy a seat at the table at some point, not only those currently at the table. In order to study the choices of those currently at the table one needs to know not only who they are and what their preferences are, but also the nature of the process assigning those seats over time, as well as the preferences of those outside the table today but who might seat at some point in the future. Such intertemporal considerations do not tend to appear explicitly in many applications of veto player logic.

To focus our institutional comparative statics we take the distribution of preferences of players as given (and as sufficiently heterogeneous), and we change the number of (veto) players seating at the table. This enables us to focus the discussion on the number of players, which in such a set up are equivalent to the number of *effective* veto players in the more general set up of veto player theory (Tsebelis, 2002). Also, we assume that all players are unitary players in order to simplify the analysis. Our general point does not depend on these assumptions, which are made for operational simplicity.

In terms of specifics, the models of the next two sections differ in the number of players (3 in one case, N in the other); in the specification of preferences (a canonical two-dimensional spatial example, a canonical distributive problem); in the time horizon (2 periods, an infinite

number of periods); and in the exact nature of intertemporal linkages (through a technology of policy insulation, through strategic behavior).

Throughout the analysis we define a policy profile as being *adaptable* if it responds adequately to economic shocks, and as *stable* if it does not change for reasons other than those economic shocks.

2. Policymaking Over Time, Policy Rigidities and the Role of Veto Players

The process of policymaking can be understood as a process of bargains and exchanges (or transactions) among political actors. The type of transactions that political actors are able to engage in will depend on the possibilities provided by the institutional environment. Issues of credibility and the capacity to enforce policy agreements are crucial for political actors to be able to engage in intertemporal transactions. From the perspective of the issues emphasized in this paper, we might collapse the intertemporal concerns of political actors (and observers) into two questions: 1) How can I prevent that actors with preferences different from my own make choices in the future that go against my interests? and 2) In a changing and uncertain world, will we be able to adjust policies to new circumstances in the future? The answer to the first question seems to call for tied hands, while the answer to the second seems to call for discretion.⁸

In this section we construct a very simple example, extending a work-horse social choice example to a two-period setting. The point of the model is just to illustrate one possible mechanism by which intertemporal considerations can overturn “static” veto player theory predictions. We show that if we focus our analysis just at one point in time (a one-period game), the larger the number of veto players the lower the likelihood that policy will change with respect to any given status quo, as made abundantly clear by veto player theory. But one can get different results by adding a very simple intertemporal structure. The intertemporal structure we use consists of having a second period and of allowing players in the first period to decide whether to use a technology that allows writing policy in stone so that it cannot be changed in the second period.

There are various different mechanisms by which future policies might be heavily constrained by current choices. These include writing policies into the constitution, entering into international agreements where there are high exit penalties imposed by other countries or international organizations, embedding heavy delegation structures that make policy change very

difficult, and adopting policies that induce responses of private economic actors that greatly increase exit costs.⁹

Under what conditions will political actors want to introduce such policy rigidities? The benefit would come from insuring themselves against an adverse political configuration tomorrow, in which their interests might not be taken into consideration in policy choice; the cost is that whoever is in power tomorrow will lose the ability to adjust policy in response to future economic shocks.¹⁰ It turns out that the former fear might be mitigated if there is a greater chance that the current decision-makers will be sitting at the table in the future. In general, the greater the number of (veto) actors at the table in the future, the more likely each player who is present today will also be there in the future.¹¹ So, by this mechanism, it is possible that a polity with a larger number of veto players will be better able to adjust policy in response to shocks.

2.1. The Set-Up

The simple model we present here is a common example of the archetypical spatial policymaking problem in Public Choice (see, for instance, Mueller, 2003), and it is also close to the canonical example in the intuitive exposition of veto player logic in Tsebelis (2002).¹² After presenting the set up, the analysis proceeds in two steps. In the first step we study a one-period model that generates results analogous to those of veto player theory. In the second step we introduce intertemporal considerations in the context of a two-period model and show that, under some conditions, results could be different from those emerging from the one-period model.

2.1.1 The Economic/Policy Environment

There are three players ($i = A, B, C$), with preferences in a two-dimensional policy space over public goods x_1 and x_2 . Let $Y = \{x_1, x_2\}$ be a policy vector. Each player has an ideal point Y_i and their utility decreases with the Euclidean distance from their ideal point to any policy vector, so that they have circular indifference curves. For brevity of exposition, let the three ideal points Y_A , Y_B , and Y_C constitute the vertices of an equilateral triangle within the (compact) set of feasible policy vectors $\Psi \subseteq \mathbb{R}^2$. Imagine for instance that the economy consists of these two public goods and a numeraire private good x_0 , and that A prefers relatively low levels of both public goods (since he likes private consumption more), B likes public good x_1 , and C likes public good x_2 . In that case their ideal points can be as represented in Figure 3.

<FIGURE 3>

Let the two-dimensional vector Θ represent the state of technology or the state of exogenous economic factors. Let Θ have distribution $F(\theta_1, \theta_2)$, with mean $(0,0)$ and variance covariance matrix $\begin{bmatrix} \sigma^2 & 0 \\ 0 & \sigma^2 \end{bmatrix}$. Θ could represent the relative cost of transforming the private good x_0 into each of the two public goods x_1 and x_2 . Imagine a vector of positive shocks Θ to represent a state of the world in which the cost of transforming x_0 into x_1 and x_2 is quite low, and that production and consumption elasticities are such that all players want then to consume more of both x_1 and x_2 ; in that case the shock will move everybody's ideal points in the northeast direction to, say, $Y_i + \Theta$. Assuming that to be the case, utility (measured by the square of the distance from actual policy to the policy vector preferred by player i given state of the world Θ) can be represented as $U_i(Y, \Theta) = -\|Y - (Y_i + \Theta)\|^2$.

2.1.2 Political Institutions

Political institutions are the rules that specify who gets to seat at the decision table and which decision procedure is used there. Following the logic and definition of veto players, we will work under the maintained assumption that the decision procedure is unanimity; that is, the consent of all (veto) players at the table will be required to change policy from any given status quo. Our comparative institutional analysis will consist of varying v , the number of (veto) players seating at the table. We will focus on comparing an institutional set up with 2 veto players with an institutional set up with 3 veto players.

Let μ be a state variable that represents the relative political power of various players. (We omit time subscripts initially since our first model will be a one-period one, but μ_t varying over time will be an important part of our argument in the intertemporal formulation). μ can take values μ_{ijk} , with ijk representing an ordering of players A , B , and C . Given political institutions (summarized by v), the realization of μ will tell us who are the political actors holding those veto positions. For instance if $\mu = \mu_{ACB}$ and $v = 2$, then players A and C will be seating at the decision table. Given our simple three-player example, there are six possible orderings of the

players. Let p_{ijk} be the probability of each ordering. In most of the exposition we will focus on the uniform case in which $p_{ijk}=1/6$ for all ijk .

2.1.3 Some Notation

As stated, our comparison of alternative political institutions will consist on comparing set-ups with $v = 2$ to set ups with $v = 3$. Let $\mathbb{P}_v(\mu, \Theta)$ be the *Pareto set* under political institutions v when the political state is μ and the economic state is Θ . The Pareto set, also called *unanimity core*, is the set of points that cannot be defeated by unanimity by any other point. For instance, for any given Θ , if $v = 3$, the Pareto set will be the area of the triangle with vertices $(Y_A + \Theta)$, $(Y_B + \Theta)$, and $(Y_C + \Theta)$. If $v = 2$ and $\mu = \mu_{ijk}$, the Pareto set will be the segment $\overline{(Y_i + \Theta)(Y_j + \Theta)}$. Let $|\mathbb{P}_v(\mu, \Theta)|$ denote the area of the set $\mathbb{P}_v(\mu, \Theta)$.

2.2. A One-Period Model

Consider the following one-period set up. There is an exogenous status quo policy vector Y_0 , then the random variables μ and Θ realize, and then the v veto players seating at the table decide Y_1 . Unanimity among them is required in order to pick a Y_1 different from Y_0 . It is easy to see that the policy chosen will have to belong to $\mathbb{P}_v(\mu, \Theta)$. In the case of $v = 2$, the chosen policy vector will belong to the segment between the ex post ideal points of the two players favored by μ . In the case of $v = 3$, the chosen policy vector will belong to the triangle with vertices in the three ex post (inclusive of Θ) ideal points.

Policy Y_1 will be unchanged with respect to the status quo policy Y_0 if it so happens that $Y_0 \in \mathbb{P}_v(\mu, \Theta)$, since in that case at least one of the veto players will reject any proposal to change policy. Otherwise, policy will adjust to the economic shocks Θ . (The exact location of policy in that case will depend on the details of the bargaining protocol within the table). The ex ante probability of not observing a policy change will be equal to the probability that the location of the status quo Y_0 and the realization of the random vectors Θ and μ are such that $Y_0 \in \mathbb{P}_v(\mu, \Theta)$. If we compare such probability in the two institutional scenarios $v = 2$ and $v = 3$, it is easy to see that the probability of policy remaining at the status quo is greater when $v = 3$, since $|\mathbb{P}_3(\mu, \Theta)| > |\mathbb{P}_2(\mu, \Theta)|$. That is the well known result (A2) from veto player theory that adding new veto players increases policy stability (reduces the likelihood of policy adjustment).¹³

2.3. A Two-Period Model with Intertemporal Linkages

Let us consider now the following game. Period 1 starts with a given status quo Y_0 ; then the random variables μ_1 and Θ_1 realize; after that the v veto players seating at the table decide two things: Y_1 as before, and also whether to utilize a policy technology that will enable them to fix their policy choice Y_1 into the second period. Let $T \in \{0,1\}$ represent such choice, where $T = 1$ means embedding such policy rigidity (so that $T = 1$ implies $Y_2 = Y_1$), while $T = 0$ means not doing that.

In period 2, Y_1 and T are inherited from the past, and the random variables μ_2 and Θ_2 realize. The economic shock process is a random walk, so that Θ_2 is the sum of Θ_1 plus another realization from the same process. After the random variables realize, the v veto players of that period convene and decide policy Y_2 , and the world ends.

We will analyze this set up using backward induction, considering first the case of $v = 2$, and then the case of $v = 3$.

2.3.1 Two Veto Players

In the second period, if $T = 1$, there is not much to choose, and $Y_2 = Y_1$ independently of the realization of μ_2 and Θ_2 . If $T = 0$, then $Y_2 \in \mathbb{P}_2(\mu_2, \Theta_2)$ as in the one-period game. In the first period, the choice of Y_1 will lead to $Y_1 \in \mathbb{P}_2(\mu_1, \Theta_1)$.¹⁴ In order to abbreviate the analysis below we will assume that the bargaining protocol is such that the policy vector chosen is the midpoint of the segment $\mathbb{P}_v(\mu_t, \Theta_t)$ for $t = 1, 2$. (Analogously, we will assume later that the policy vector chosen when there are three veto players is the orthocenter of the equilateral triangle with vertices in their ideal points; that is, the central point of the Pareto set).

The analysis is a bit more involved when looking at the decision on T . Given some symmetry assumptions, and in particular $p_{ijk} = 1/6$ for all ijk , we can look at that decision from the point of view of any of the veto players of time 1, since they will have the same preferences over the choice of T .¹⁵ Let $V(T)$ represent the expected value of utility in period 2 as a function of T .

If they were to insulate policy y_1 into the future ($T = 1$), then they would expect utility in the second period to be

$$V(1) = E_{\Theta_2}[U_i(Y_1, \Theta_2)]. \quad (1)$$

If they decide not to fix policy ($T = 0$), then the utility expected from the second period would be

$$V(0) = E_{\mu_2, \Theta_2} [U_i(Y_2(\mu_2, \Theta_2), \Theta_2)],$$

where the expectation is taken over the distributions of μ_2 and Θ_2 , and $Y_2(\mu_2, \Theta_2)$ is the policy that the two veto players indicated by μ_2 will choose in period 2 if the state of the world is Θ_2 . Given that if $T = 0$ second period veto players will optimize their policy choice with respect to Θ_2 , and given various symmetry assumptions, the expression for $V(0)$ can be simplified to

$$V(0) = E_{\mu_2} [U_i(Y_2^*(\mu_2))],$$

where $Y_2^*(\mu_2)$ is the policy vector chosen optimally over Θ_2 by the two veto players indicated by μ_2 . More specifically, with our uniformity assumptions over the distribution of μ ,

$$V(0) = \frac{2}{3} U_i(Y_2^*(\mu_i)) + \frac{1}{3} U_i(Y_2^*(\mu_{-i})), \quad (2)$$

where μ_i represents those orderings in which i is among the two veto players and μ_{-i} those orderings in which he is excluded from the table in period 2. Clearly, the latter situation will give player i a lower level of utility. In our example, the distance from the chosen point to the ideal point will be equal to half the length of a side of the triangle in the former case, and equal to the height of the triangle in the latter case.

Comparing expression (1) for $V(1)$ to expression (2) for $V(0)$, we can find the conditions under which veto players in the first period will decide to embed rigidities so that policy cannot be changed in the future. Basically, they have to ponder two opposing forces. On the one hand, the advantages of fixing policy come from protecting against the fear of exclusion in the second period. On the other, they have to weigh the cost of not being able to adjust policy to economic shocks in the future. It is easy to show that for any given distribution of preferences and characterization of $F(\theta_1, \theta_2)$, there is a unique solution to the preferred choice of T . Rigidities are more likely to be imposed ($T = 1$) the greater the divergence of preferences among players, and the smaller the variance of economic shocks σ^2 . (This result is the two dimensions / three players analog of results in Spiller and Tommasi, 2003). Intuitively, is it easy to see that if the variance of shocks goes to zero, $V(1)$ goes to the maximum joint utility that veto players of

period 1 can expect from policy in the second period—because their jointly preferred policy of the second period will be identical to the one they pick in the first period. On the other hand, if the variance of shocks is very large, $V(1)$ will tend to be very low. More generally, as σ^2 increases, there will be a point at which $V(1)$ becomes lower than $V(0)$, so that current veto players do not find it worthwhile to insulate policy from future veto players.

2.3.2 Three Veto Players

Consider now the case of $v = 3$. In period 2, as before, there is nothing to do if $T = 1$, so that $Y_2 = Y_1$. If $T = 0$, then $Y_2 \in \mathbb{P}_3(\mu_2, \Theta_2)$. Coming to period 1, $Y_1 \in \mathbb{P}_3(\mu_1, \Theta_1)$. Now consider the decision on T . In this case, the expression for $V(1)$ is still analogous to equation (1), but $V(0)$ becomes $V(0) = U_i(Y_2^*)$, where Y_2^* is the policy vector of the second period now optimized jointly by the three veto players (independently of the realization of μ_2) over the realization of Θ_2 . (Remember that for brevity of exposition we are assuming that they will choose the central point of the Pareto Set).

It is easy to notice that in this case $V(0) > V(1)$, so that players will never choose to insulate policy when $v = 3$. Given that we already saw that there are functional forms and parameters values for which policy is insulated when $v = 2$, this proves our point; contrary to assertion (A2) of veto player theory, we find that it is quite possible that increasing the number of veto players increases the adaptability of policies (the capacity to respond to economic shocks).

Intuitively, the motivation for policy insulation comes from a traditional concern of transaction cost economics (Williamson, 1996) and transaction cost politics (Dixit 1996, North, 1990), fear of future opportunism by other players. We can see that such concern will depend on the intertemporal allocation of political power, a feature not explicitly considered in approaches such as veto player theory so far. In a symmetric veto player specification as the one above, the probability of being excluded from future coalitions is $(N - v)/N$. In the three-players example it was equal to $1/3$ when $v = 2$. That probability jumps to zero in the case where all the players are present at the table also tomorrow. The result is more general: the larger the number of institutional veto players, the more likely each current actor occupying one of those gates will be there in the future, and hence less likely will policy insulation be.

Notice that the inefficiencies introduced by insulating policy out of fear of future opportunism can be interpreted as the consequence of the inability of players to commit not to behave opportunistically in the future. Again, this is a classical result in transaction cost economics and transaction cost politics. Bringing those general insights to the discussion about the role of various political institutions (in this case the number of veto players), one is left to ponder under what conditions will political institutions ameliorate or worsen those commitment and credibility problems. A natural framework for thinking about those issues is the study of reputation in the context of repeated games, to which we turn next.

3. Intertemporal Cooperation. The Role of Veto Players

The theory of repeated games provides a natural instrument to think about policymaking from an intertemporal perspective, to verify what type of policy agreements can be implemented over time, and to look into the effects of various institutional configurations on the likelihood of such agreements. One of our arguments is that cooperation in a repeated game context might permit some polities to have *both* more stability and more adaptability than those polities which are unable to enforce cooperative policymaking (contradicting assertion A1 of veto player theory). Furthermore, we will provide an example in which having more veto players facilitates cooperative policymaking and hence induces more stability (as in static veto player theory) and more adaptability (contradicting assertion A2 of veto player theory).

The way in which any parameter of a game affects equilibrium outcomes in repeated games is richer than the way they do in the context of static games. The (institutional) parameter of interest for this paper is the number of veto players. There are a number of channels by which v can have the effect of increasing the likelihood of cooperation and hence facilitating policy adjustment. One such channel is the one we explored in the previous section, the increased likelihood of being at the decision table in the future. In this section we provide an example in which we explore another channel of influence of the number of veto players. A higher v will make the deviation from a cooperative equilibrium less profitable, since the gains from such an opportunistic short-term behavior will in that case need to be shared with more (veto) players.

We do that in the context of a very simple version of the well-known cake-splitting legislative bargaining model of Baron and Ferejohn (1989).

3.1. The Set Up

3.1.1 The Economic/Policy Environment

Imagine a polity composed of N players. For concreteness imagine that these players are political parties, each of which is a perfect agent for a perfectly homogeneous socioeconomic constituency or “sector.” These parties interact repeatedly and discount the future at a common factor $\delta \in (0,1)$. Each player maximizes an objective function $\sum \delta^t U_i(Y_t, \Theta_t)$ to be explained below.

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

Let Y_t be the vector of policies at time t . Policies are constrained to belong to a set Ψ of feasible policies. Policies will map into welfare levels (utility) for the players, conditional on the state of the world Θ_t . Policies will be valued differently under different conditions (e.g., irrigation projects are valued more if droughts rather than floods are expected, but farmers will tend to value irrigation projects more than city dwellers). The specification of the payoff function $U(\cdot)$ that we use below reflects that mix of conflicting and common interests in a simple manner. Similarly, we assume a simple formulation for the stochastic process Θ_t and the way in which it affects the connection between policies and welfare.

In order to capture the heterogeneity of preferences among players (which as before will permit us to treat the number of veto players as equivalent to the number of *effective* veto players), we will depict the policy game as, in part, a purely distributive game, in which Y_t is a vector of shares x_{it} of a given budget to be given to each party i . The element of common interest in responding to shocks is captured by the fact that the different distributions of shares are not neutral in terms of efficiency. Each period, depending on the realization of economic shocks, different allocations will be associated with different sizes of the total pie. In practice, we push the simplicity of the latter assumption to the extreme and assume that it is optimal to give the whole pie to a particular sector which received “the shock.”

Let us simplify the vector Θ_t to the scalar θ_t , which takes values $1, 2, \dots, N$, each with probability $1/N$, indicating which “sector” is more productive (or more needy, in an insurance interpretation) each period. Let the set of feasible policies Ψ be the unit N -simplex (so that $\sum_i x_{it} = 1$, and $x_{it} \geq 0$), and the payoff of each player in each period be

$$U_i(Y_t, \Theta_t) = x_{it} + \alpha I(Y_t, \Theta_t),$$

where $I(Y_t, \Theta_t)$ is an indicator function that takes the values

$$I(Y_t, \Theta_t) = \begin{cases} 1, & \text{if } x_{jt} = 1 \text{ for } j = \theta_t \\ 0, & \text{otherwise.} \end{cases}$$

This formulation for the Θ_t process will imply that if θ_t takes the value j it would be welfare-enhancing to have policies favoring sector j in period t . For concreteness we interpret x_{it} as shares of a budget received by each party, and each player cares about his own share as well as about an externality received if the budget is allocated in the most efficient way—in this simple example, giving the entire budget to the favored sector. Nothing substantial will change, only the tediousness of the algebra, if we assume a smoother formulation where the optimal allocation is not a corner solution and where preferences are not linear. The “budget” interpretation facilitates the exposition (and some linearity assumptions facilitate the algebra), but the formulation can easily stand for more general sets of policies that map into payoffs for each player, with elements of conflict of interest (captured by the feasible set of policies restricting the sum of utilities), and of common interest in the right type of policy adjustment, captured by the second term of the payoff function. To make the problem interesting, we assume $\alpha < 1$; otherwise anyone would always choose the optimal allocation in a trivial manner.

3.1.2 Political Institutions

The political decision-making process consists of $v < N$ (veto) players sitting at the decision table in each period and then making a decision through some bargaining protocol. The final voting rule is unanimity, as implied by the definition of veto players. Who gets to sit at the table in each period is determined by the power allocation rule μ_t . We will assume for simplicity that each of the N players has an identical probability v/N of being a veto player at time t .¹⁶ This can be thought of as a political system with N parties, where v of them will form the government at any point in time, and in which all the parties are symmetrical ex-ante and have the same chances of being part of the government. For concreteness and simplicity of exposition, we use a

particular specification for the bargaining protocol among veto players: a one-round closed rule. The political state variable μ_t partitions the set of players into three subsets in each period: player a_t , the agenda setter; a subset containing the other $(v - 1)$ veto players of time t who will vote on the proposal made by a_t ; and the rest of the players, who are outside the table.

In each period, after the random variables μ and θ are realized, the agenda setter a_t will propose an allocation, a vector $Y_t^a = \{x_{1t}^a, x_{2t}^a, \dots, x_{Nt}^a\}$. After that, the other $(v - 1)$ veto players of the period will vote.¹⁷ If all the voters vote in favor, then the allocation implemented Y_t will be equal to the one proposed by the agenda setter, $Y_t = Y_t^a$. Otherwise, every player obtains a status quo payoff which we normalize to 0 for notational simplicity.¹⁸

3.1.3 Analysis

The way we analyze the game follows a standard usage in applied work on repeated games.¹⁹ We construct strategies that can support first-best allocations as part of a cooperative equilibrium to the repeated game. We characterize the properties of the resulting first-best policies, which turn out to be both stable and adaptable – they adjust to shocks but do not change for other reasons. On the contrary, non cooperative equilibria (such as the infinite repetition of the one-shot Nash equilibrium) lead to policies that are neither stable nor adaptable. We perform comparative statics analysis of the effects of exogenous parameters on cooperation, and we show that a larger number of veto players v increases the chances of cooperation, and hence stability and adaptability.

In the *non-cooperative equilibrium*, that repeats the equilibrium of the stage game,²⁰ the agenda setter proposes an allocation giving slightly above zero to each of the other veto players (zero in the limit), nothing to those outside the table, and keeps almost all the budget. In this non-cooperative equilibrium policies do not adjust to economic shocks θ (they are not adaptable), while they do move around depending on who happens to be the agenda setter of the period (they are not stable). This equilibrium gives the players an expected value of $V^N = \left(\frac{1}{1-\delta} \right) \left(\frac{1+\alpha}{N} \right)$.

This is because in expected value each player gets to keep the whole budget one out of N periods, and receives the externality α each time the agenda setter happens to be the player receiving the shock θ_t , an event which also occurs with probability $1/N$.

On the contrary, the first-best allocation gives all the budget to the player who received the shock θ_t ; i.e., the first-best policy is perfectly adaptable. This policy leads to expected welfare $V^* = \left(\frac{1}{1-\delta}\right)\left(\frac{1}{N} + \alpha\right)$. The difference with the non-cooperative case lies in the fact that now the positive externality is realized every period. Clearly $V^* > V^N$.

Following a common usage in the literature, we build a strategy to induce first-best cooperation focusing on a simple punishment strategy of reverting to non-cooperation (to the actions prescribed by the unique equilibrium of the one-shot game) forever.²¹ Cooperation requires the agenda setter proposing the first-best allocation and the other veto players voting in favor of it. This leads to the payoff V^* . In the (absorbing) punishment path everybody receives V^N .

Using the “one-shot deviation principle” (Mailath and Samuelson, 2006, Section 2.2) we verify under what conditions or parameters it is true that deviations from cooperation are not profitable. The player with the greatest incentive to defect is the agenda setter—in the cases in which he/she is not at the same time the representative of the sector that received the productivity shock θ_t . In order for a deviation to materialize, the agenda setter has to make sure that the $(v - 1)$ other veto players go along, so that he has to give them a high enough share of his opportunistic take. There is a critical value from the point of view of those veto players, below which they would reject the deviation proposed by the agenda setter, and hence make that deviation unprofitable. Given that reservation value, the agenda setter can calculate how much he gets to keep from the opportunistic deviation, and compare that with the expected value from sticking to the cooperative path. This leads to the condition for the existence of our cooperative equilibrium which we summarize in the following lemma (proven in Stein et al., 2008):

Lemma:

Under the proposed strategies, cooperation implementing the first-best allocation can be sustained if and only if $\left(\frac{\delta}{1-\delta}\right) \geq \left(\frac{N}{N-1}\right)\left(\frac{1-\alpha}{\alpha}\right)\left(\frac{1}{v}\right)$.

As standard, it is easier to sustain cooperation when players are more patient (larger δ), and when there are fewer players (smaller N). Cooperation is also more likely the higher the weight of the factor of common interest α . More central to the point of this paper, the inequality

in the condition is relaxed (that is, cooperation is more likely) by having a larger number of veto players v . That is because the more veto players, the less profitable for each of them to deviate from cooperation, since they have to split the gains from the opportunistic deviation among more people (in our simple formulation this is seen just in the payoff of the agenda setter, but it would affect all of them if we had a different bargaining protocol within the table). Having more veto players, then, reduces the incentives to deviate from cooperation, making cooperation sustainable over a larger set of parameters. In the usual parlance, having more veto players “makes cooperation more likely.”

Cooperation in the intertemporal game leads to the optimal allocation which is perfectly responsive to economic shocks θ_t , and not responsive to other circumstances (such as who happens to be the agenda setter). In contrast, in the non cooperative equilibrium, policy does not adjust adequately to economic shocks, while it might vary for unrelated reasons, so that it is “unstable.” If different polities were in different equilibria, our model predicts a positive correlation between stability and adaptability across countries (contrary to assertion A1 of veto player theory). It also leads to the possibility (literally true in the example) that more veto players increase both stability *and* adaptability (contrary to assertion A1 of veto player theory).

4. Related Literature

The analysis in this paper is connected to and draws from various previous strands of scholarly inquiry. In terms of the ultimate object of interest, some properties of public policies or capabilities of government, it bridges the concerns for policy stability from the credibility literature with the concerns for policy adaptability from the reform literature. It also draws insights from a number of efforts relating various aspects of political institutions to such policy capabilities and to the use of varied alternatives to achieve credibility. It attempts to build a bridge between a rich line of inquiry articulated around the notion of veto players (as a summary representation of political systems) and an intertemporal approach to policymaking that draws from transaction cost economics and its application to politics.

4.1 Credibility and (or?) the Capacity to Adjust

Recognizing economic agents’ likely assessment of economic policies has become a salient concern since the Lucas Critique. The same policy “on paper” can produce different outcomes depending on the extent to which economic agents believe that the policy will be sustained; the

credibility of economic policy is essential for them to produce the desired outcomes.²² One important concern in the rich literature on the credibility of economic policy is the capacity of governments to sustain policy over time.

On the other hand, in many contexts the concern has been the capacity to adjust policy in the presence of shocks, changing realities, or policy learning. This question about the capacity to adjust policies has been asked in various contexts, such as macroeconomic stabilization, structural reforms in developing and transition countries, and welfare state retrenchment in developed economies. In a recent review article significantly titled “Who Adjusts and When?”, Alesina, Ardagna and Trebbi ask “why do certain countries implement economic reforms relatively promptly and swiftly, whereas others delay them?” (2006: 1).²³ As Gosta Esping-Andersen (1999: 5), the dean of welfare state scholars puts it: “The real crisis of contemporary welfare regimes lies in the disjunction between the existing institutional configuration and exogenous change. Contemporary welfare states ... have their origins in, and mirror, a society that no longer obtains” (quoted in Hacker, 2004: 244).

The capacity to sustain policies to make them credible and the capacity to change them when necessary are seen in various corners of the literature as conflicting objectives.²⁴ As stated, one salient example of the perceived stability-adaptability trade off is provided by the literature on “Rules versus Discretion” in macroeconomics. “It is suboptimal for policy to remain unresponsive to shocks. Hence in a stochastic world there appears to be a trade-off between the necessary ‘tying of hands’ to conquer the effects of time-inconsistency and the desirability of flexible response” (Minford, 1995: 195).²⁵

It is interesting to notice that the literature on the credibility of macroeconomic policies found in the use of repeated game logic a possible way out of the tradeoff between commitment and flexibility,²⁶ as we do in this paper.

The early economics literature on credibility of macro policies and on the political economy of reform tended to take a simplified view of political systems (assuming the presence of a benevolent policymaker in the former). Later on, the literature became richer in political detail and became more articulated with insights from political science. Work studying the credibility of policies in various political systems includes Keefer and Stasavage (2003) who study how the credibility of delegating monetary policy depends on the number of veto players;²⁷ Hallerberg, Strauch, and von Hagen (2009) who argue that the effects of different fiscal

institutions in dealing with common pool fiscal problems depend on political context; and Levy and Spiller (1994 and 1996) who study how different instruments can provide regulatory credibility in different political systems. On the other end of the policy-change concern, Spolaore (2004) studies how countries with different institutional settings react and adjust (or fail to adjust) to changes in the environment, but he also considers the possibility of adjusting too often, anticipating our concern for the joint consideration of adaptability and stability.

Henisz (2000) is one of the leading cross-national studies of the effects of institutional configurations (in particular checks and balances) on economic outcomes. Henisz constructed a widely used international measure of the number of effective veto players (*“political constraints”*), and found that more veto players are associated with higher growth rates.

4.2 *Intertemporal Politics*

Institutions are human constructs that carry decisions over time. When thinking about the effects of political institutions on policy, it is fairly natural to see political institutions as allocating power *over time* as we do in this paper. The conceptualization of policymaking as intertemporal exchanges draws from an important tradition in transaction cost economics (Williamson 1985, 1989 and 2005) which has been applied to the political arena by authors such as North (1990), Moe (1990a, 1990b and 2005), Dixit (1996), Levy and Spiller (1994 and 1996), and Spiller and Tommasi (2003) and (2007).²⁸

The choices of current power holders are affected by their concern about decisions made by those holding power in the future. This logic is the basis of various important strands of research, including the politics of structural choice (McCubbins, Noll and Weingast, 1987 and 1989; Moe, 1990 and 1997; Epstein and O’Halloran, 1999; Huber and Shipan, 2002; de Figueiredo, 2002),²⁹ the strategic use of debt (Persson and Svensson, 1989; Alesina and Tabellini, 1990), the sources of inefficiencies in representative democracy (Besley and Coate, 1998; Dixit and Londregan, 1995), and the reform of political institutions (Aghion, Alesina and Trebbi, 2008). A somewhat similar logic is present in the important literature studying the origins of various institutions, such as Parliament (North and Weingast, 1989), the committee system (Weingast and Marshall, 1988), and the democratic franchise (Acemoglu and Robinson, 2000 and 2006).

Applications of repeated game logic to policymaking have been used in various domains, such as international relations (Powell, 1991; Barrett, 1999), macroeconomic policy in two-party systems (Alesina, 1987 and 1988), fiscal and monetary policymaking in the EMU (Dixit, 2001), and behavior within the U.S. legislature (Fox, 2006; Carrubba and Volden, 2000; Calvert and Fox, 2003). But to our knowledge, there is almost no formal work of that sort explicitly addressing institutional questions in comparative politics.³⁰ The comparative politics literature offers various insightful discussions of problems of intertemporal cooperation, with some prominent examples in the study of party system institutionalization and Executive-Legislative relations (for instance, Shugart and Carey, 1992; Mainwaring and Scully, 1995; Mainwaring and Shugart, 1997; and Mainwaring and Torcal, 2005). We believe these insights could (and perhaps should) be explored more formally, and this paper is a small step in that direction.

4.3 Contesting Veto Player Predictions

Other recent studies, developed at about the same time than this agenda, have also questioned prediction A2 from veto player theory. Gelbach and Malesky (2008) argue that (welfare-improving) reform is not necessarily more difficult when there are more institutional veto players, and present evidence on that regard. The logic there is not based on intertemporal considerations, but on the interaction between these institutional veto players (who are assumed to be likely to prefer efficient policies), with interest groups that could lobby or bribe to obtain inefficient policies.

Two papers by Johannes Lindvall (2009a and 2009b) get closer to our exchange with veto player theory from an intertemporal perspective. Lindvall (2009a) studies the reform capacity of coalition governments and argues, also contrary to the veto player tradition, that reform capacity does not depend on the number of parties in government, but on the availability of institutions that allow parties to commit to policy packages. That paper provides evidence for the argument exploring employment policies in four European democracies. Lindvall (2009b) provides a formal model with side payments to compensate losers of (efficiency-enhancing) reform, and also identifies the likelihood of seating at the table tomorrow as a key determinant of the willingness to cooperate in the present.

5. Conclusion

The fact that institutions allocate power over time has been an essential component in many explanations of institutional *origin*. Various authors argue that institutions are chosen/imposed in order to achieve efficiency or distributive objectives *over time*.³¹ On the other hand, research on the *effects* of institutions, including the veto player literature, has given less emphasis to the intertemporal dimensions of policy exchange and has looked mainly at interactions that take place at one point in time.³² This paper contributes to a literature that argues that an explicitly intertemporal perspective needs to be incorporated to the study of the effects of political institutions on policy outcomes.

In particular, the paper takes issue with some standard predictions in the very influential veto player literature. We show that when modeling in explicitly intertemporal contexts, it is not necessarily true that: (A1) polities with more stable and credible policies have more difficulty in adjusting policies to new circumstances, and (A2) polities with more veto players have more difficulty in adjusting policies to new circumstances. The Appendix summarizes some preliminary evidence that suggests that our theoretical concerns seem to have some empirical grounding.

We have shown some examples where the supposedly univocal predictions of veto player theory do not hold. It would be worthwhile to explore further the conditions of applicability of each prediction once the veto player framework is broadened by the inclusion of intertemporal considerations in a more general manner.

There are various other pending tasks in the agenda suggested by this paper. On the one hand, it could be important to pursue the theoretical and empirical implications of different configurations of political institutions (such as veto player constellations) on policy properties and on socioeconomic outcomes. Caplan (2004: 261) states on Tsebelis (2002), “one of the highlights of the book is a re-thinking of the link between credibility and growth.” As Tsebelis puts it: “high level of commitment” is another way of saying “inability for political response.” It is not clear whether many veto players will lead to higher or lower growth, because they will “lock” a country to whatever policies they inherited, and it depends whether such policies induce or inhibit growth. (Tsebelis 2002: 204). This connects to the empirical analysis in Henisz (2000). Henisz’s analytical motivation focuses on the credibility problems induced by potential

policy changes.³³ But he recognizes that “the constraints provided by these institutional and political factors may also hamstring government efforts to respond to external shocks and/or correct policy mistakes.” He goes on, mentioning examples of the “lock in” of bad policies, and concludes that “the questions of the determinants of good or bad status quo policies and conditions under which flexibility is relatively more or less costly, while of fundamental importance to economic welfare, are left for future research.” (2000: 4). We view the analysis in this paper and in some related works as consistent with the findings in Henisz (2000), now interpreted more broadly than just through the credibility channel. Good economic outcomes such as growth are likely to be induced by both policy stability (not changing policy for the wrong reasons) and by policy adaptability (adjustment to shocks). Our exploratory analysis in Scartascini, Stein, and Tommasi (2008) shows that Henisz’s measure of political constraints is positively associated with both stability and adaptability, and Scartascini, Stein, and Tommasi (2009) shows that both stability and adaptability are positively associated with growth.

The intertemporal perspective suggested in the paper can be incorporated more directly into the comparative study of the effects of political institutions, by exploring what configurations of political institutions (say for instance, presidential versus parliamentary government organization, or alternative party systems) are more likely to induce intertemporal cooperation, along the lines modeled in Section 3 of this paper and in Spiller and Tommasi (2003 and 2007).

Appendix: Empirical Verification of Veto Player Assertions A1 and A2

In this appendix we summarize an empirical exploration developed in more detail in Scartascini, Stein, and Tommasi (2008). In previous work (IDB 2005, Stein and Tommasi 2007, Scartascini, Stein, and Tommasi 2009) we have developed a number of indicators of some qualities of public policies across countries, including proxies for *Stability* and *Adaptability*. In Table 1 we report the correlations between various proxies of adaptability and of stability identified in widely available international datasets, which are available in Berkman et al. (2009).

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

For measuring policy adaptability we use four variables from three different sources. Two variables come from the Columbia University State Capacity Survey (CUSCS). In the first question experts (from academia, government and media) rate the states ability to respond effectively to domestic economic problems, and in the second they rate states' ability to formulate and implement national policy initiatives. A third variable is drawn from The Bertelsmann Transformation Index (BTI) for 2006 measuring the degree of adaptability based on the ability of the political leadership to act flexibly, political leaders' capability for learning, and whether political leaders can replace failing measures with innovative policy. Finally, we used the Profils Institutionnels item where experts evaluate the decision-making capacity of political authorities in economic matters (responsibility, rapidity, etc).

Scartascini, Stein and Tommasi (2008) provide more detailed explanation of the sources and discussion and justification of these proxies, as well as a robustness analysis. As seen in the table, we are not able to find a negative correlation among any of the measures of stability and any of the measures of stability, nor do we find it for indexes of stability and adaptability that aggregate these measures, independently of the aggregation procedure. (Figure 1 in the text plots

the correlation among indexes of stability and adaptability that are the average of the individual components as explained in Scartascini, Stein, and Tommasi, 2008). This negative finding holds regardless of the controls used.

<TABLE A1>

We also verify whether polities with more veto players have less adaptable policies (assertion A2), using as dependent variable the various proxies for adaptability mentioned above and as independent, some of the variables commonly used as international measures of the number of veto players. These proxies of vetoes include the variable on Executive Constraints from the Polity IV project, POLCONV from the dataset developed by Witold Henisz, and Checks from the Database of Political Institutions. As shown in Table 2 for the aggregate index of Adaptability as dependent variable, we are unable to find a negative relationship with any of the different measures of veto players. The results in Figure 2 in the text correspond to the regression in column 8. These results are robust to the dependent variables used—whether the index or its components—and to the controls introduced.

<TABLE A2>

As explained in Scartascini, Stein, and Tommasi (2008 and 2009), our choice of mainly subjective measures of stability and adaptability was guided to maximize country coverage, in order to test the institutional predictions of veto player theory. We have also performed this analysis on more “objective” measures of adaptability and stability, available for smaller samples of countries. One of those measures is the procyclicality of government expenditures from Kaminsky, Reinhart, and Végh (2004). Procyclicality of expenditures seems a good measure of the inability of governments to adequately respond to economic conditions. This measure is highly correlated with our measures of adaptability (with negative sign) as presented in Table 3 below. By definition higher procyclicality implies lower adaptability, hence the negative sign in the correlations. As a proxy for stability we have used the volatility of discretionary expenditure.³⁴ Because higher volatility implies lower stability, the expected correlation should be negative. As shown in Table 3, these variables are significantly correlated.

<TABLE A3>

Using these objectives measures of adaptability and stability we cannot find the negative correlation expected according to A1 either, regardless of the control variables used. When controlling for (the natural log of) GDP per capita in 1990, and including legal origin and regional dummies, the correlation between these measures is close to 0.3 (and statistically significant at the 1 percent level) in a sample of 92 observations.

What happens with A2 using these variables? Using procyclicality of government expenditures as a more objective proxy for adaptability, we find no positive and statistically significant coefficients as it would be expected from the veto player theory (Table 4). That is, we find no evidence that increasing the number of veto players reduces policy adaptability.

<TABLE A4>

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Figure 1. Scatterplot of Stability and Adaptability (controlling for Ln (GDPpc) in 1990, Regional dummies and Legal Origin dummies)

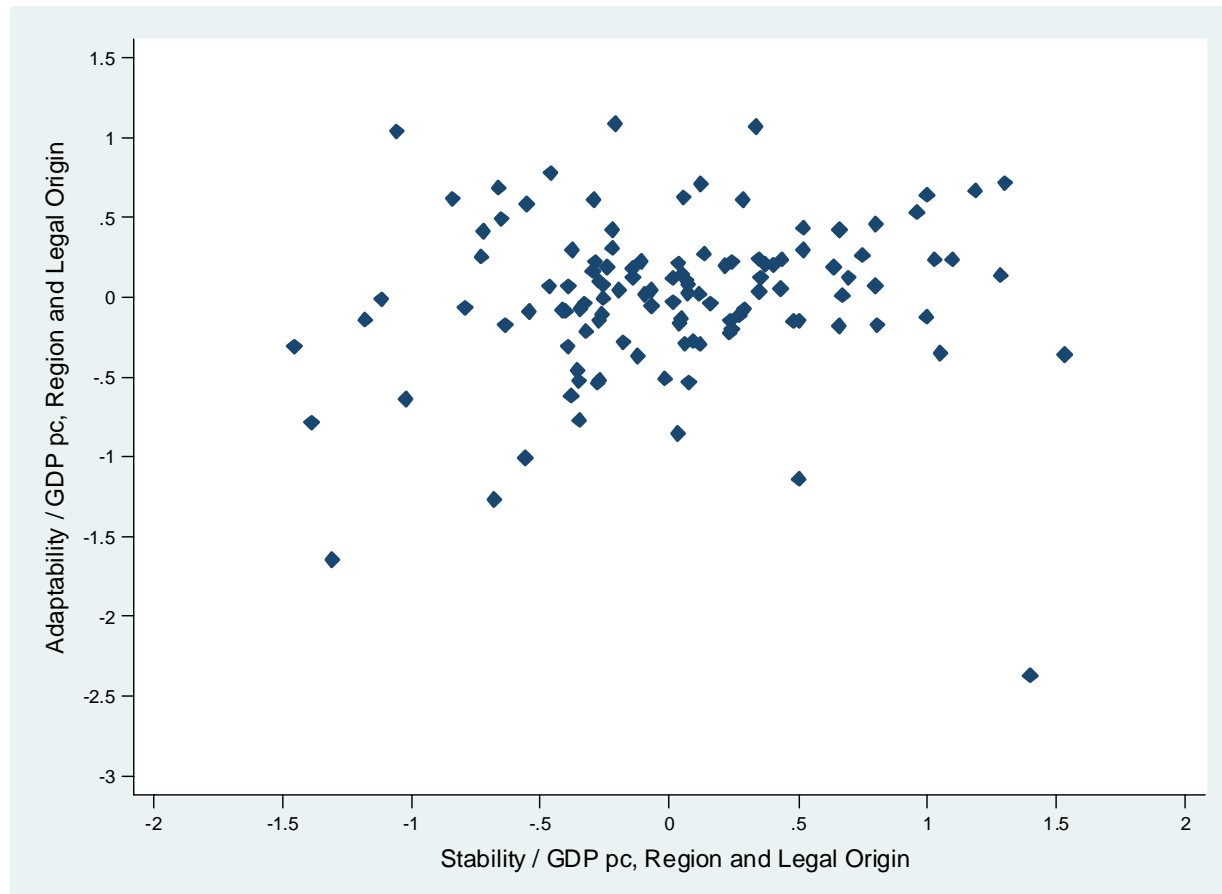
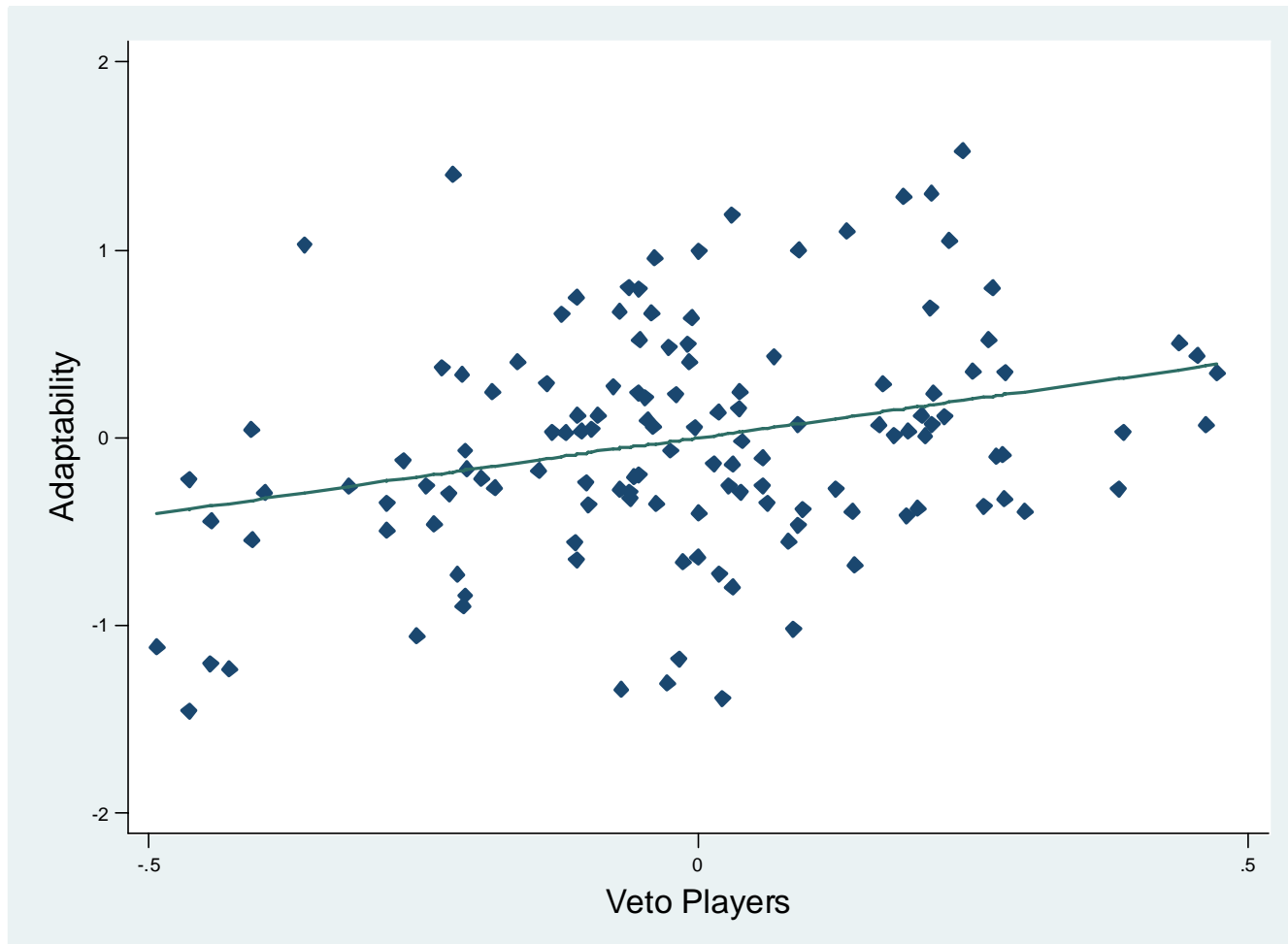


Figure 2. Correlation Veto Players and Adaptability



Note: The graph represents the partial regression of Adaptability on Veto Players controlling for Ln(GDPpc) in 1990, Regional dummies, and Legal Origin dummies

Figure 3.

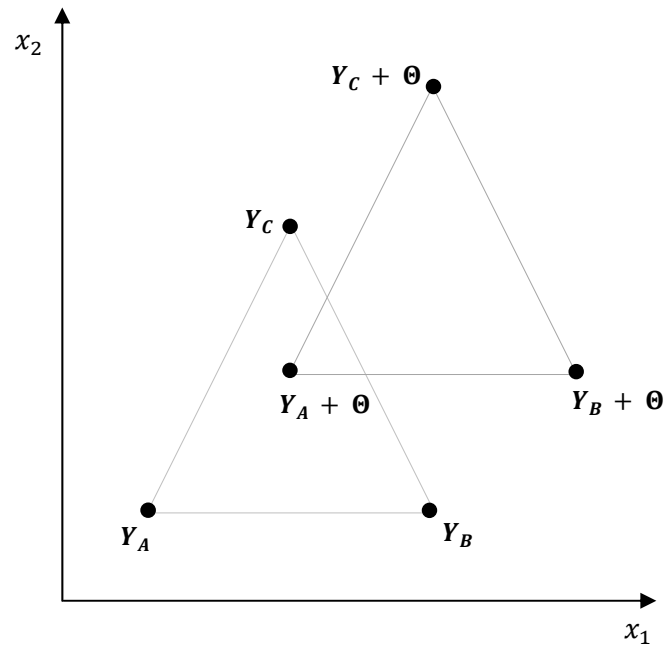


Table A1. Correlation between measures of Stability and Adaptability

Stability Measures	Adaptability Measures			Adaptability Index
	Adaptability (BTI)	State Responsiveness	Decision Making Capacity	
Fraser Volatility	0.13 82	0.25** 90	0.21 70	
Government Commitment	0.13 47	0.35*** 59	0.18 52	
Policy Changes	0.29** 47	0.16 58	0.49*** 51	
Policy Consistency	0.35*** 61	0.15 73	0.52*** 80	
Stability Index				0.11 117

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

We have controlled for Ln(GDPpc) in 1990, Regional dummies, and Legal Origin dummies

Second line in each row is number of observations.

Table A2. The Number of Veto Players and Policy Adaptability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Executive Constraints (Polity IV)	0.21*** (0.03)			0.12*** (0.03)			0.13*** (0.04)		
PolconV		1.53*** (0.19)			0.90*** (0.22)			0.82*** (0.23)	
Checks			0.20*** (0.04)			0.08** (0.04)			0.07 (0.05)
Ln(GDPpc) in 1990				Yes	Yes	Yes	Yes	Yes	Yes
Region							Yes	Yes	Yes
Legal Origin							Yes	Yes	Yes
AdjR2	0.27	0.31	0.13	0.41	0.42	0.37	0.48	0.49	0.43
Obs	143	145	142	131	133	131	130	132	130

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

Estimation procedure: Weighted least squares

Table A3. Partial correlations between the "subjective" and objective measures of stability and adaptability

<i>Adaptability Measures</i>	Cyclicalities of Gov Expenditures	<i>Stability Measures</i>	Volatility of discretionary expenditure
Adaptability (BTI)	-0.10 71	Fraser Volatility	-0.33*** 111
State Responsiveness	-0.43*** 86	Government Commitment	-0.49*** 72
Decision Making Capacity	-0.47*** 66	Policy Changes	-0.48*** 71
		Policy Consistency	-0.35*** 81
Adaptability Index	-0.42*** 95	Stability Index	-0.48*** 122

Note: Significant at 1% level (***) and 5% (**)
Second line in each row is number of observations.

Table A4. The Number of Veto Players and Cyclicalities of Government Expenditures

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Executive Constraints (Polity IV)	-0.09*** (0.02)			-0.09*** (0.02)			-0.02 (0.03)			-0.03 (0.04)		
PolconV		-0.60*** (0.14)			-0.62*** (0.15)			0.03 (0.20)			0.07 (0.23)	
Checks			-0.09*** (0.03)			-0.08*** (0.03)			0.05 (0.04)			0.04 (0.05)
Ln(GDPpc) in 1990							Yes	Yes	Yes	Yes	Yes	Yes
Region							Yes	Yes	Yes	Yes	Yes	Yes
Legal Origin							Yes	Yes	Yes	Yes	Yes	Yes
Rate of Inflation in 1990				Yes	Yes	Yes				Yes	Yes	Yes
R2	0.15	0.16	0.09	0.19	0.19	0.11	0.38	0.38	0.39	0.42	0.42	0.42
Obs	98	99	98	88	89	88	95	96	95	86	87	86

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

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¹ Most references to the literature are provided in Section 4.

² See the working paper version Scartascini, Stein and Tommasi (2008), Ganghoff (2003), and Hallerberg (2002) for further discussion of and references on the theory and applications.

³ The initial work has been applied mainly to parliamentary democracies, but the framework has wider scope. An important volume edited by Haggard and McCubbins (2001), with theoretical contributions by the editors in combination with Gary Cox and Matthew Shugart, provides some valuable extensions and applications of the veto player logic to presidential regimes. Henisz (2000) has been determinant to expand its use to wider cross-country analysis.

⁴ Common parlance refers to a person as being stable, when he or she is not changing course every day for no apparent reason. On the other hand, a person is said to be adaptable, when he or she does not stubbornly stick to previous courses of action when new circumstances call for a change. Clearly, we all can find examples of pairs of people in which one person is both more stable and more adaptable than the other. One motivation for this paper is our belief that the same is possibly true not only for individuals, but also for groups of individuals, as we will show theoretically, and for countries, as we suggest empirically. We owe this analogy to Gary Cox and Steph Haggard.

⁵ Compare the chapter on Chile (Aninat et al., 2008) with the chapter on Argentina (Spiller and Tommasi, 2008) in Stein et al (2008). IDB (2005) reports various comparative case studies in a number of policy domains (taxation, regulation of public utilities, education, and fiscal policy) across countries, and in every single case Argentina shows less credibility *and* a lower capacity to adjust than Chile.

⁶ Almost any interesting policy situation involves at the same time elements of conflict and elements of commonality of interest. I want policies that favor me and you want policies that favor you, but we both have a common interest in policies that are not too damaging overall, and in policies that solve pressing problems. If the

country is suffering from very high inflation, we all want some form of stabilization, although different ways of stabilizing the economy have different distributive costs and benefits (Alesina and Drazen, 1991).

⁷ We treat changes in political power as exogenous in order to simplify the intertemporal analysis, in particular because the purpose of this paper is to contrast our predictions to those of veto player theory, which does not include such considerations either. For the same reasons we also ignore agency issues, another very important factor in studying the effects of institutions on policy outcomes, but not directly related to the reasoning of veto player theory.

⁸ The use of the singular of the first person (“I”) in the first question, and of the plural (“we”) in the second reflects the relative weight of conflict and of common interest in each case.

⁹ The constitutionalization of common policies is a recurrent strategy in some countries like Brazil (Alston et al, 2008). Commitment through international agreements is very common in trade policy (Staiger and Tabellini, 1999; Maggi and Rodriguez-Clare, 1998; Limao and Tovar, 2009). Delegation as a way of protecting current policies from future changes is the core point in a large and important literature on structural choice (see, for instance, Bendor, Glazer and Hammond, 2001; Epstein and O’Halloran, 1994; McCubbins, Noll and Weingast, 1987 and 1989; Moe, 1990a). A dramatic example of a policy inducing economic reactions leading to exceedingly high exit costs was that of the Convertibility Regime in Argentina (Galiani, Heymann and Tommasi, 2003).

¹⁰ One version of this problem has been modeled in Spiller and Tommasi (2003 and 2007, Chapter 2), following the modeling strategy of de Figueiredo (2002) and the intuitions in Moe (1990a and 1990b).

¹¹ The logic we are pushing here is twofold: (i) institutional rules affect not only who is in power today but also the chances of each actor being in power again in the future, (ii) the effects of institutional rules operate also through the incorporation of that future in the current strategic reasoning of players. This logic travels beyond the discussion of veto players (unanimity rule). If those seating at the table were to choose by mechanisms other than unanimity, say by majority, the logic will still apply. (We thank John Morgan for highlighting this point).

¹² See for instance figure 1.2 of Tsebelis (2002). In Tsebelis’ words: “each individual veto player is represented here by his ideal point in an n-dimensional policy space. In addition, I assume that each veto player has *circular indifference curves*, that he is indifferent between alternatives that have the same distance from his ideal point.” “The statements that depend simply on the number of veto players hold regardless of the shape of the indifference curves.” (2002: 20)

¹³ The more general result in veto player theory is that “the addition of a new veto player increases policy stability *or leaves it the same*” (Proposition 1.1, Tsebelis 2002: 25). The caveat that we have highlighted occurs when the added veto player/s have preferences that are “absorbed” in the distribution of preferences of the other veto players. (In that case $\mathbb{P}_3(\mu, \Theta) = \mathbb{P}_2(\mu, \Theta)$). Our set up leaves out such possibility given the maintained assumptions about the distribution of preferences. That is, in our set up all potential veto players are *effective* veto players. Those distinctions are important for some applied analysis, but are immaterial for the point of this paper. We also abstract from collective veto players, another important consideration in the broader analysis of veto player literature, in order to focus more concisely on one simple comparative statics.

¹⁴ More generally, there could be strategic interactions between the choice of Y_1 and the choice of T , and also players might choose to fix a policy for period 2 other than Y_1 (if that is allowed). Some assumptions in our set up permit us to discard such considerations, which might be relevant for the more general study of intertemporal policymaking, but would distract from the point we want to illustrate with this example.

¹⁵ In a less symmetric case, the key veto player for this decision will be the actor less willing to rigidize the policy, which will be the actor more likely to be again at the table in the future. As in de Figueiredo, 2002, the actors more willing to insulate policy into the future will be those who have more power today than they expect to have in the future, who would try to make the most of their “moment under the sun,” per Moe, 1990. See Dixit, Grossman, and Gul (2000) for a rich dynamic analysis of the incentives to cooperate over time as a function of the *non-stationary* distribution of political power.

¹⁶ Non-symmetric probability distributions will lead to focus the likelihood of cooperation on those actors less likely to reappear at the table in the future, as in Alesina (1988), de Figueiredo (2002), and Spiller and Tommasi (2007).

¹⁷ We assume away mixed strategies.

¹⁸ The closed-rule bargaining protocol is chosen to simplify the exposition. Our results generalize to a broader class of bargaining protocols. McCarty and Meirowitz (2007, Chapter 10), provides an excellent summary of bargaining protocols. Most of the literature has focused on majority-rule bargaining a la Baron and Ferejohn (1989). In our case we are working with unanimity bargaining, as in Rubinstein (1982), since unanimity is the formal definition of veto players. Also, nothing substantial will change if we assumed a status quo payoff different from zero. An extension we hope to derive in future work will make the status quo at t equal the policy vector at $t-1$. That will be a worthwhile, but complex, extension, since it will take us away from simple repeated games to the realm of truly

dynamic games with non-strategic state variables. Such a formulation will generate additional strategic linkages of policy over time, linkages that (as often the case in repeated and dynamic games), could induce a variety of different connections between the exogenous variables (such as v) and the endogenous ones. Yet, treating each period as dealing with an independent issue with an exogenous status quo is not too unrealistic in the broad interpretation of frameworks such as Tsebelis' or ours. Both deal with the overall policymaking process of a polity, in which case we can imagine that θ represents the main issue of the day, which is a different one each time, and in which the status quo is the outcome of substantial drift and unintended consequences of policies chosen long ago.

¹⁹ We present a brief exposition of the results here, all of which are proved in the working paper version (Scartascini, Stein and Tommasi, 2008).

²⁰ There is a unique subgame perfect equilibrium to the one-period game which survives iterated elimination of weakly dominated strategies in the voting stage of the game (McCarty and Meirowitz, 2007, Chapter 5).

²¹ As argued by de Figueiredo (2002), this type of "grim trigger" strategy is particularly suitable for analyzing repeated games of complete and perfect information such as this one. This strategy is also utilized, for instance, in Carrubba and Volden (2000), Nocke and White (2007), and Stokes (2005).

²² Kydland and Prescott (1977) and Calvo (1978) were seminal pieces in this line of concern. Textbook treatments of the issue of credibility are provided in Persson and Tabellini (1990) and Drazen (2000). Rodrik (1995) studies the benefits of credibility in the context of trade liberalization. Milesi-Ferretti (1995) provides a related example in the context of exchange rate regimes of how thinking in terms of intertemporal politics might lead to different results than time-consistency models of benevolent planners.

²³ Rodrik (1996), Tommasi and Velasco (1996), Sturzenegger and Tommasi (1998), and Drazen (2000) provide surveys on the political economy of market-oriented reforms.

²⁴ That tradeoff is, at some deeper level, also present in the social choice literature since Arrow's impossibility theorem. For instance, Arrow (2006), when asked what lessons should constitution-writers seek in the theory of social choice and mechanism design, says that "constitutions should provide some way of ensuring decisiveness at the expense of transitivity" (2006: 973). Lack of transitivity is, at some level, analogous to instability.

²⁵ See also Lohmann (1992). In applications to regulation, Laffont and Tirole (1992) argue that "lack of commitment leads to underinvestment for fear of expropriation (Williamson 1975). But not committing may also have value. The

first justification for non commitment is the difficulty of signing complete state contingent contracts in an uncertain environment.”

²⁶ See for instance Barro and Gordon (1983) and the recent review in Stokey (2002).

²⁷ Keefer and Stasavage (2003) also anticipate us in distinguishing between policy *credibility* and policy *stability* as defined by Tsebelis’ (1995, 2002) veto player analysis. Like us, they pay special attention to intertemporal considerations and the role of veto players in contexts (in their case, monetary policy) where economic shocks are important. In particular, they focus on the very relevant question of the conditions under which delegation to some agency with the capacity to respond to shocks provides greater insurance against ex post opportunism. (Chapter 2 of Spiller and Tommasi, 2007, also explores delegation as a possible solution to intertemporal commitment problems).

²⁸ Jacobs (2004) presents a verbal argument about intertemporal policy choices close in spirit to ours, and applies it to study the politics of pension reform in Britain and the United States in Jacobs (2008).

²⁹ The two models we present below (sections 2 and 3) share different aspects of the logic of De Figueiredo (2002) who, using a repeated game framework, explores the conditions under which current power holders will use *insulation strategies*, and identifies interactions between the number of veto points and the degree of political uncertainty in such choices.

³⁰ Rodrik (2000) compares democracies to non-democracies, and presents an argument in which intertemporal cooperation is a way of supporting better policies and hence more desirable economic outcomes, among other things facilitating bargaining over how to deal with adverse shocks. See also Henisz (2004).

³¹ See for instance Williamson (1991) and Baker, Gibbons and Murphy (2002) on alternative modes of economic organization, North and Weingast (1989) on Parliament, Weingast and Marshall (1988) on institutions within the U.S. Congress, Acemoglu and Robinson (2006) on the democratic franchise, Fearon (2006) on elections, Przeworski (2005) on democratic pacts, Boix (1999) on electoral systems, and Buchanan and Tullock (1962) on constitutions.

³² See for instance the excellent textbook treatment in Persson and Tabellini (2000). Part IV of the book is devoted to “dynamic politics” but most of the dynamics are captured through *economic* state variables. Those chapters do not focus on the comparative analysis of the effects of different political institutions, a topic covered in Part III in the context of static models. The contrast between the dynamic analysis of institutional origin and the static analysis of institutional effects is evident in Weingast’s (2002) survey article on Rational Choice Institutionalism.

³³ “Frequent and potentially arbitrary changes in taxation, regulatory, or other relevant economic policy increase investor uncertainty and raise hurdle rates for private investment.” (Henisz 2000: 2).

³⁴ This indicator follows the methodology of Fatás and Mihov (2003, 2005). Higher values indicate higher volatility of fiscal policy. Data and Sources: General government final consumption expenditure (per cent of GDP) , Real GDP (constant local currency units) and GDP deflator from World Bank World Development Indicators; Government consumption expenditure, GDP and Oil prices (average crude price, US dollars per barrel) from IMF International Financial Statistics.