UNIVERSITY OF CALIFORNIA

Los Angeles

Essays on Political Influence

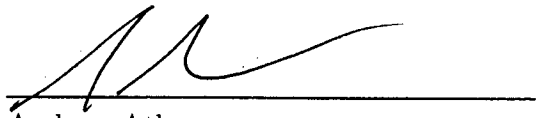
A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Philosophy
in Economics

by

Matias Jose Iaryczower

2005

The dissertation of Matias Jose Iaryczower is approved.



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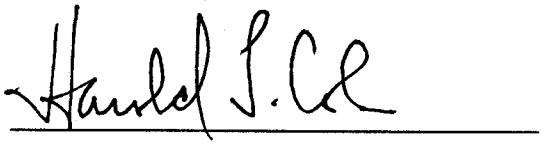

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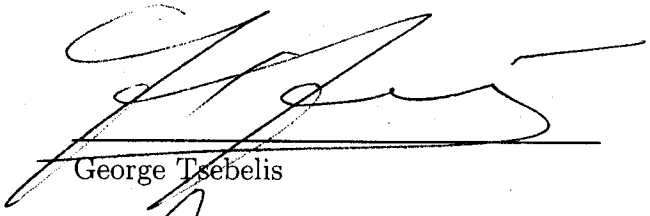

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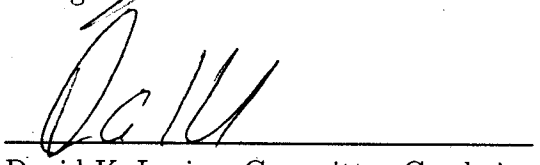

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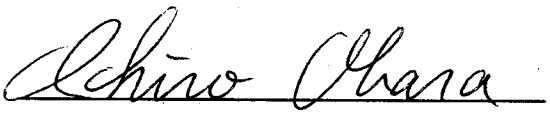

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To Juliana and Federico.

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Acknowledgments

In the course of writing this dissertation, I benefited tremendously from the guidance of a superb group of professors at UCLA. I will remain forever indebted to each of them. Each in their own way, they have helped me to surpass my weaknesses and bolster my strengths. Each in their own way, they have made their best to transform me into a successful member of this profession.

I am especially grateful to my main advisor, David Levine. David was always eager to help, and more efficient at it than anyone I had ever known. His ability to see the big picture of any problem that is presented to him in a consistent way is unmatched, as is the sharpness of his specific comments. Equally important to me, however, was his caring and encouraging predisposition. I always left David's office with a renewed optimism about my projects.

Christian Hellwig did more for me than I could have ever expected. He made more than his share of effort to get us to discuss regularly the progress of my research, forcing me to get out of the cocoon I tended to isolate myself in. His deep and meticulous comments – ranging from the details of the models to the general organization of the papers – improved my work considerably, and taught me vital lessons for the future. His input was invaluable.

Ichiro Obara was always there for support and guidance. Our extended discussions about my project on coalitional deviations in infinite horizon dynamic games will surely payoff in the future. For this and all his help with the projects I did complete, I thank him.

Hal Cole gave me a hard time in every one of the internal seminars in which I presented my work. How much I owe him for doing this! Hal's tough lessons on how to communicate ideas effectively were priceless. I owe him for this, for his detailed comments, for always pushing me to be direct in my writing, and for his general guidance.

Andy Atkeson provided crucial advice, in particular with regards to what would become my job market paper and first chapter of this dissertation. He was always supportive and offered deep, intelligent suggestions in a straightforward manner. As Hal and David, he showed me the benefits of being direct and efficient in writing academic papers. I enjoyed every one of our interactions.

Finally, I also want to thank Leeat Yariv for her constructive criticism, her receptiveness, and her numerous and always accurate comments and suggestions.

I am also indebted to Hugo Hopenhayn, John Riley, Hongbin Cai, Jean-Laurent Rosenthal, and George Tsebelis for valuable comments and suggestions, and to fellow students at UCLA for interesting discussions and good memories. In particular, I want to thank Andrea Raffo, Jaime Guajardo, Juan Pablo Medina, Mariano Tappata, Seda Ertac, Alper

Ozgit, Joonsuk Lee, Yossi Yakhin, Thanos Bolmatis, Doug McKee, Kevin Caves, and Eduardo Maruyama.

A special mention is due to my coauthors, Pablo Spiller and Mariano Tommasi. Chapter 3 of this dissertation is a version of Iaryczower, Matias, Pablo T. Spiller, and Mariano Tommasi 2005. "Judicial Lobbying: The Politics of Labor Law Constitutional Interpretation." *USC-Caltech Center for the Study of Law and Politics*, Working Paper 042. Chapter 2 is a reprint of Iaryczower, Matias, Pablo T. Spiller and Mariano Tommasi 2002. "Judicial Independence in Unstable Environments, Argentina 1935-1998." *American Journal of Political Science* 46 (October): 699-716. I would like to acknowledge the permission of Blackwell Publishing for allowing me to reprint it in this dissertation.

I also want to thank my parents, Maca and Jose, who always gave me freedom of choice and encouraged my endeavors.

Finally, I want to thank my wife Juliana, to whom I owe the most. As my friend and *mi cosa*, she fills each day of my life with love, happiness, and joy. Her contribution, however, goes far beyond. She has read every version of each paper I wrote almost as many times as I did, always giving me valuable comments and suggestions. She has helped in almost every way one could possibly imagine, too many to write here. This dissertation would truly have not been possible without her support.

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PUBLICATIONS AND PRESENTATIONS

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Iaryczower, Matias 2004. "Contestable Leaderships. Party Discipline and Vote Buying in Legislatures." Paper presented at the Annual Meeting of the American Political Science Association, Chicago, Illinois.

Iaryczower, Matias, Pablo T. Spiller, and Mariano Tommasi 2005. "Judicial Lobbying: The Politics of Labor Law Constitutional Interpretation." Paper presented at the Law and Positive Political Theory Conference, Northwestern University School of Law, Chicago, Illinois.

ABSTRACT OF THE DISSERTATION

Essays on Political Influence

by

Matias Jose Iaryczower
Doctor of Philosophy in Economics
University of California, Los Angeles, 2005
Professor David K. Levine, Co-chair
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Public policy is the result of strategic interactions between political actors. In this dissertation, we study different manifestations of such political influence. In the first chapter, we focus on influence within political organizations, analyzing the determinants of the balance of power between a party leader and party backbenchers (i.e., party discipline). The model formalizes the tradeoff between resources at the leader's discretion, and her need to maintain a minimum level of support to continue leading. We show that offers of publicly observable, irreversible payments on the spot increase the value of promises of future partisan benefits such as nomination to party lists. Moreover, contrary to conventional wisdom,

these promises are insufficient to grant significant power to the party leader. In the second chapter, we focus on influence between branches of government. In particular, we examine empirically the political incentives faced by individual justices of the Argentinean Supreme Court. While Argentina's constitution and electoral rules promote a fragmented polity, most analysts do not consider the Argentina judiciary as independent. We show that this perception is inappropriate. Our results show an often defiant court subject to constraints, behaving strategically. The probability of voting against the government falls the stronger the control of the president over the legislature, but increases the less aligned the justice is with the President. In the third chapter, we focus on the influence of interest groups on public policy. We link the theory of interest groups influence over the legislature with that of congressional control over the judiciary, and .study the implications of separation of powers for the existence and effectiveness of lobbying by interest groups. The resulting framework reconciles the theoretical literature of lobbying with the negative available evidence on the impact of lobbying over legislative outcomes, and sheds light to the determinants of lobbying in separation-of-powers systems. We provide conditions for judicial decisions to be sensitive to legislative lobbying, and find that lobbying falls the more divided the legislature is on the relevant issues. We apply this framework to analyze Supreme Court labor decisions in Argentina, and find results consistent with the predictions of the theory.

Chapter 1

Contestable Leaderships: Party Discipline and Vote Buying in Legislatures

1.1 Introduction

One of the central questions in the study of representative democracy is how partisan organizations shape decision-making in legislatures. At the core of this matter is the balance of power between party leaders and rank-and-file party legislators (backbenchers, or PBs). Under what conditions will a party leader be able to induce her party to support an unpopular position? Conversely, when will party leaders have to back away to the views of a majority of the party?

In this paper, we provide a simple model to tackle these questions. In particular, we reexamine within the model the conventional wisdom in political science that leadership's promises of future benefits (such as nomination to party lists) are the key instruments through which a party leader can induce backbenchers to support the party line, possibly even against their preferences.[1] This ability of the party leader to change

[1] "The assumption here is simply that nomination control is a key determinant of an agent's unity because leaders who possess this power should be able to discipline their followers." (Morgenstern 2004); "The nature of the nominating procedure determines the nature of the party; he who can make the nominations is the owner of the party" (Schattschneider, 1942; p.64). For similar arguments, see, among many others, Ames 2002, Bowler, Farrel and Katz 1999, and Sanchez de Dios 1999.The role of nomination

backbenchers' voting behavior away from their ideal voting pattern is typically referred to as *party discipline* (see Krehbiel, 1993; Cox and McCubbins, 1993; Tsebelis, 1995).

The model in this paper formalizes the tradeoff between resources at the leader's discretion, and the inherently contestable nature of the leadership in political parties. On the one hand, the party leader is endowed with two types of resources with which to influence legislators' voting behavior: *(i) pork*, which consists of current payments that can be distributed to both PBs and opposition legislators, and *(ii) electoral benefits*, which consist of promises of future partisan benefits that can only be distributed to PBs. On the other hand, the incumbent's control of the leadership is always a potentially precarious construction: the leader needs to maintain a minimum level of support to continue leading (Panebianco 1988; Calvert 1987).

Since promises of future benefits can only be delivered if the incumbent leader retains the command of the party, a collective action problem between backbenchers opposing the incumbent emerges. Backbenchers risk losing much by opposing a leader who (they believe) has a firm support inside the party, but might be willing to do so if they believe that others will do so too. In other words, in this environment the value of the incumbent's promises is not exogenously given, but *endogenously* determined by backbenchers' aggregate support to the incumbent leader.

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power in the literature is only matched by that of the vote of confidence in parliamentary systems (see Diermeier and Feddersen 1998 for a formal statement of this argument).

To consider this problem formally, we model the internal constraints faced by the incumbent party leader as the partisan equivalent of a confidence vote procedure. The party leader is overthrown - and her promises of electoral benefits abandoned in favor of a reward to the supporters of the new establishment - whenever her advocated position does not gather the support of a minimum proportion μ ($\mu \leq 1/2$) of party backbenchers in the legislature.[2] Since $\mu < 1/2$ means that the removal of the leader requires the defection of more than a majority of PBs, we refer to this case as a supermajority requirement for removal.

We analyze the equilibrium outcomes in this environment under an assumption of incomplete information about PBs' preferences. Although it is common knowledge that backbenchers want to vote for policies which are close to their constituency's preferred position, these ideal policies are assumed to be the legislators' private information, and correlated with each other. Specifically, the ideal policy of PB i is composed of a common and an idiosyncratic unobservable components. As a result, backbenchers are uncertain about the distribution of fellow party members in the policy space, but can use the information contained in their constituencies' preferred position to enhance their estimate.

While under an assumption of common knowledge of PBs' preferences radically different behavioral patterns can be sustained as equilibria by self

[2] We rule out the case $\mu > 1/2$, as it would imply that a challenger gathering the support of a minority of the party would be able to overthrow the incumbent from office.

fulfilling beliefs, relaxing this assumption allows us to pin down a unique equilibrium, and thus leads to a much more productive analysis.[3] We show, in particular, that electoral benefits can be useless for the incumbent leader; i.e., contrary to the conventional wisdom, nomination power can be completely ineffective in providing discipline in legislative parties.

Specifically, Proposition 1.2 shows that if a majority of the party disagrees (ex ante) with the incumbent's preferred position, electoral benefits are useless to the incumbent leader unless she also distributes benefits on the spot, or she is protected by a supermajority requirement for removal. This illustrates the central insight of the paper. Promises of future benefits will alter voting behavior only if party members believe that the incumbent leader has a strong hold to the reins of power. Understanding the role of different instruments in achieving discipline thus requires understanding their contribution to the formation of these expectations among backbenchers.

In this track, we show that there is a complementarity between the allocation of pork to party members and the value of electoral benefits. Keeping PBs' beliefs about the actions of fellow party members fixed, an increase of one dollar in the allocation of pork to party members increases the net value of the incumbent's offer by the same amount. Beliefs about the actions of other PBs will not remain fixed, however, as the revised offer will induce PBs to anticipate a higher support to the party line

[3] For a discussion of the methodological aspects underpinning this result, see Morris and Shin 2001, Morris and Shin 2003, and Frankel, Morris and Pauzner 2003.

among party members, and thus a higher probability of the incumbent's survival, leading ultimately to a higher expected value of her promises.

As an immediate consequence of this complementarity, we have the following result. If endowed with sufficiently large amount of current resources (pork), the incumbent can make the electoral benefits valuable, even when ex ante a majority of the party opposes the party line. Moreover, in this case the incumbent needs in fact to buy the party in order to generate discipline. In the absence of a supermajority requirement for removal of the leader, then, the influence of backbenchers is not lost, but only reshaped in terms of a lower bound of payments that needs to be allocated to party members for party resources to be in play.

This raises the question of how the allocation of pork between party and non-party members is affected by the availability of future partisan benefits. While pork can be used to attain the support of opposition legislators, this allocation has an opportunity cost: buying the opposition implies weakening the support inside the party. In fact, our previous analysis implies that the magnitude of this opportunity cost will be determined by the strength of the complementarity between pork and electoral benefits. Proposition 1.4 exploits the fact that the multiplier effect of current resources is higher the more exposed the incumbent is to internal threats, to conclude that more vulnerable leaders will allocate a higher proportion of pork to buy members of their own party *vis a vis* the opposition.

The remainder of the paper is organized as follows. The basic model is presented in Section 1.2. Section 1.3 provides a characterization of voting equilibria, which constitutes the basis of the substantive study in Section 1.4. Section 1.5 extends the model to include an endogenous determination of the challenge to the incumbent leader. We show here that the basic model is a stylized description of this extended framework, assuming that policy alternatives are not "too close" in the policy space. Section 1.6 relates the framework and results with the literature, and Section 1.7 concludes.

1.2 The Basic Model

There are three types of agents in the model: *(i)* a party leader, *(ii)* a continuum of party backbenchers (PBs), with total size 1 and *(iii)* a continuum of size $\beta < 1$ of opposition legislators. PBs and opposition legislators integrate a legislature, which chooses between two given policy alternatives q and x, $q < x$, by simple majority voting.

1.2.1 Legislators' Preferences and Information

PBs' payoffs are determined by *(i)* "monetary" benefits they can extract from the party leadership, and *(ii)* the distance between their constituents "ideal policy" θ_i and the policy they voted for in Congress,

$x_i \in \{q, x\}$.[4] In particular, monetary transfers enter linearly into their utility function, and policy preferences of PB i are represented by a utility function $u(|x_i - \theta_i|)$.

It will be convenient to define - taking the pair (q, x) of policy alternatives as given - the function $v(\theta_i) \equiv u(|q - \theta_i|) - u(|x - \theta_i|)$. The value $v(\theta_i)$ denotes the net gain of voting for q instead of x for PB i, with ideal policy θ_i. Note that by construction $v(\theta_i) = 0$ at $\theta_i = ((x + q)/2)$, and that $|v(\cdot)|$ is symmetric around this point. Moreover, we will assume throughout that $v(\cdot)$ is a continuous function satisfying the following condition:

Assumption (A1). There exists $\underline{\alpha} > 0$ such that $\forall\ (\theta_i, \theta_i')$ with $\theta_i' > \theta_i$,

$$v(\theta_i) - v(\theta_i') \geq \underline{\alpha}(\theta_i' - \theta_i)$$

Assumption A1 implies, in particular, that $v(\cdot)$ is strictly decreasing and that $|v(\cdot)|$ is convex, making $v(\cdot)$ unbounded above and below.[5]

The ideal policy of each PB, θ_i, is private information, but correlated with that of the other PBs. Specifically, we assume that the ideal policy of

[4] This formulation intends to capture the essential tradeoff for legislators between pleasing their constituencies and the party leadership, two "masters" with (generically) different objectives.

[5] The assumed properties of v obviously translate into certain requirements that our primitive function u must satisfy. In particular, for v to be decreasing, it is necessary that u is a decreasing, concave function.

PB i is given by $\theta_i = \theta + \varepsilon_i$, where the common component θ is drawn from a $N(\theta_0, \eta^2)$ distribution, the idiosyncratic component ε_i is i.i.d., and drawn from a $N(0, \sigma^2)$ distribution, and both θ and ε_i are unobservable.[6]

Opposition legislators have policy preferences $u(\cdot)$ identical to those of PBs. Although their ideal policies are private information, we assume that they are distributed according to a known c.d.f. $G(\cdot)$. This implies, in particular, that the proportion of opposition legislators with ideal policy below some number z is public information.

1.2.2 Party Leadership and Payments

The party leader cares about the policy outcome: the leader obtains net benefit $w > 0$ from the policy outcome being x instead of q. The leader is endowed with two types of resources with which to influence legislators' voting behavior: *(i) pork*, which consists of current payments that can be distributed to both PBs (r) and opposition legislators (r_o), and *(ii)* electoral benefits (e), which consist of promises of future partisan benefits that can only be distributed to PBs. As the notation suggests, we will restrict to payments that are symmetric among legislators of the same party. Moreover, we will only allow payments to an individual to be

[6] Note then that a PB is uncertain about the distribution of his fellow party members in the policy space: a democrat from California observes the preferences of his constituency, but can not perfectly separate what part is due to them being Californian and what part is due to them being democrats. Note, however, that a PB will use his private information to estimate where other party legislators lie in the policy space.

conditional on his actions, thus precluding more complex mechanisms that could possibly depend on aggregate voting patterns.

Pork payments are conditional offers: a PB receives r when voting in favor of x, and zero otherwise. Similarly, an opposition legislator receives r_o when voting in favor of x, and zero otherwise. The party leader chooses r and r_o subject to the (ex ante) budget constraint $r_o\beta + r \leq R$, where R denotes the total amount of pork resources available to the leader. Residuals from unaccepted offers are kept by the incumbent leader.

Unlike pork - the allocation of which is final and irreversible - conditional promises of electoral benefits can only be delivered if the incumbent leader survives internal challenges to her authority. Specifically, we assume that the party leader can choose between two alternative procedures, which we call a partisan and a non-partisan vote.

In a non-partisan vote the incumbent commits to distribute e to every PB irrespective of his vote. Electoral benefits thus play no role in influencing the voting behavior of PBs. Moreover, in the basic model, we assume that this unconditional allocation of electoral benefits is never challenged. The net payoff of voting for x for PB i in a non-partisan vote is then given by $\Pi_{np}(\theta_i) = r - v(\theta_i)$.

In a party vote, instead, the incumbent commits to distribute e only to PBs voting for x, and zero to others. We assume, however, that the conditional allocation of electoral benefits implicit in the party vote will

always trigger a challenge to the party leader.[7] A challenge consists of an alternative conditional distribution of electoral benefits: if a challenge is successful, PBs voting for q receive electoral benefits e, and those voting for x receive zero.[8] A challenge is successful if the incumbent's advocated position does not gather sufficient support by PBs in the legislature; i.e., if the mass of PBs in the incumbent's coalition, denoted by Γ, does not reach a minimum threshold μ ($\mu \leq 1/2$). To summarize, the net monetary payoff for a PB voting for x is e if the incumbent survives the challenge (if $\Gamma < \mu$), and $-e$ if the incumbent is overthrown. The net expected payoff of voting for x for PB i in a party vote is then $\Pi_p(\theta_i) = r + e[1 - 2\Pr(\Gamma < \mu)|\theta_i] - v(\theta_i)$.

1.2.3 Strategies and Equilibrium

Taking advantage of our minimalist representation of opposition legislators, we will exclude them from the set of players, and instead consider their best responses as part of the environment. Specifically, since the pork resource constraint $r_o\beta + r \leq R$ will hold with equality at the

[7] Section 5 extends the model allowing an endogenous determination of the challenge. There we show that the incumbent won't be challenged *(i)* in a non-partisan vote or *(ii)* in a party vote if x is sufficiently close to q ($x < \tilde{x}$ for some $\tilde{x}$), but is challenged whenever $x > \tilde{x}$. The basic model is thus a reduced form of the complete model, assuming that policy alternatives are not "too similar".

[8] As with pork, due to unaccepted offers in a party vote there won't be ex post budget balance of electoral benefits. The remainder can be assumed to be distributed to party members who are not currently in Congress, kept in the party safe box, or burned.

optimum, we substitute $r_o = (R - r)/\beta$, and treat the main party leader's allocation decision simply as a choice of a pork offer to party members $r \in [0, R]$. Given any such offer r, the mass of legislators in the opposition voting for x is then given by $[1 - G(v^{-1}((R - r)/\beta))]\beta$. The players in the modified game are therefore PBs and the incumbent party leader.

The timeline consists of three stages. In Stage 1, nature chooses a realization of the unobservable random variables θ and ε_i, and each PB i privately observes his ideal policy $\theta_i = \theta + \varepsilon_i$. The party leader receives no such private signal. In Stage 2, the party leader decides *(i)* whether to make the vote a non-partisan vote or a party vote, and *(ii)* an allocation of pork to PBs. In Stage 3, legislators vote between the alternatives x and q.

A strategy for the incumbent leader is therefore a choice of a couple (a_I, r), where $a_I \in \{p, np\}$ and $r \in [0, R]$. The incumbent's choice of a_I induces, respectively, a non-partisan-voting game and a party-voting game among PBs. A strategy for a PB i can therefore be described by a pair of functions $\xi_i^{np}(\cdot_i; r)$ and $\xi_i^{p}(\cdot; r)$ mapping the set of types Θ and possible pork allocations to party members *[0,R]* to $\{q, x\}$. The resulting $\xi_i^{np}(\theta_i; r)$ and $\xi_i^{p}(\theta_i; r)$ are therefore the votes of a PB i with ideal policy θ_i in the non-partisan-voting and party-voting games, given an offer of pork r to party members.

An equilibrium is a strategy profile $((a_I, r), \{\xi_i^{np}(\theta_i; r), \xi_i^{p}(\theta_i; r)\}_i)$ such that *(i)* (a_I, r) is feasible and sequentially rational and that *(ii)* $\xi_i^{np}(\theta_i; r)$ and $\xi_i^{p}(\theta_i; r)$ constitute, respectively, a BNE of the non-partisan-voting and party-voting games.

1.3 The Fundamentals: Voting

This section considers voting equilibria, and is thus the basis of the substantive study in section 1.4. After characterizing equilibria in non-partisan voting (Remark 1.1), we turn to the core of the section: the analysis of party votes. We show that if the distribution of PBs' preferences is common knowledge, radically different behavioral patterns can be sustained as equilibria of party votes by self-fulfilling beliefs (Remark 1.2). Relaxing this assumption allows us to pin down a unique equilibrium, which we characterize in Proposition 1.1.

Consider first non-partisan voting. Note that the net payoff of voting for x for a PB i is here given by $\Pi_{np}(\theta_i) = r - v(\theta_i)$, and is therefore independent of the actions of other players (this is a decision problem). Letting $\delta_{np}(r) \equiv v^{-1}(r)$, we then have:

Remark 1.1 (Non-Partisan Voting). *In a non-partisan voting equilibrium,* $\xi_i^{np}(\theta_i; r) = x$ *for all i such that* $\theta_i > \delta_{np}(r)$ *and* $\xi_i^{np}(\theta_i; r) = q$ *for all i such that* $\theta_i < \delta_{np}(r)$.

The situation is qualitatively different in a party vote. In a party vote, only PBs with "extreme" policy preferences are impervious to the actions of fellow party members. The decision of "centrist" individuals, instead, is determined by their beliefs about what others will do. For these individuals, supporting the incumbent's party line is optimal only if doing so allows them to capture a sufficiently high level of expected party payments. The net expected value of the incumbent's offer for individual i depends, in turn, on whether the incumbent leader will be able to retain the command of the party, and thus on *i*'s beliefs about the proportion of PBs supporting the incumbent's party line. If *i* believes that more than μ PBs will stick with the incumbent leader, he will want to do so as well; if he believes that at least $1-\mu$ PBs will defect, he will "defect" too.

In particular, if the distribution of party members' preferences is common knowledge, and the proportion of "extremists" is not high enough to determine the outcome of the incumbent's survival from the outset,

radically different behavioral patterns can be sustained as equilibria by self-fulfilling beliefs.[9]

Remark 1.2. Let $\underline{\theta_i} \equiv v^{-1}(r+e)$ and $\overline{\theta_i} \equiv v^{-1}(r-e)$. Suppose that θ is common knowledge, and that $\underline{\theta_i} < \theta + \sigma\Phi^{-1}(1-\mu) < \overline{\theta_i}$. Then the following strategy profiles are BNE of the party voting game:

(1) $\xi_i^p(\theta_i;r) = x \;\; \forall i: \theta_i > \underline{\theta_i}$ *and* $\xi_i^p(\theta_i;r) = q \;\; \forall i: \theta_i < \underline{\theta_i}$ *and*

(2) $\xi_i^p(\theta_i;r) = x \;\; \forall i: \theta_i > \overline{\theta_i}$ *and* $\xi_i^p(\theta_i;r) = q \;\; \forall i: \theta_i < \overline{\theta_i}$

Proof. Consider first strategy profile (1). Since $\theta_i|\theta \sim N(\theta,\sigma^2)$, the proportion of PBs voting for x is then given by $1-\Phi\left(\frac{(\theta_i-\theta)}{\sigma}\right)$, where $\Phi(\cdot)$ is the c.d.f. of the standard normal. The incumbent survives the challenge (with certainty) if

$$1-\Phi\left((\underline{\theta_i}-\theta)/\sigma\right) > \mu \Leftrightarrow \theta > \underline{\theta_i} - \sigma\Phi^{-1}(1-\mu)$$

Since this is true by hypothesis, the expected net payoff of voting for q for PB i is given by $v(\theta_i) - r - e$. Then optimality implies $\xi_i^p(\theta_i;r) = q$ if $\theta_i < v^{-1}(r+e) \equiv \underline{\theta_i}$ and $\xi_i^p(\theta_i;r) = x$ if $\theta_i > \underline{\theta_i}$. Similarly, consider strategy profile (2). The proportion of PBs voting for x is then given by

[9] When $\theta + \sigma\Phi^{-1}(1-\mu) < \underline{\theta_i}$, strategy profile (1) in the remark constitutes the unique BNE of the party vote game. Similarly, when $\theta + \sigma\Phi^{-1}(1-\mu) < \overline{\theta_i}$, strategy profile (2) is the unique BNE.

$1-\Phi\left((\overline{\theta}_i-\theta)/\sigma\right)$. The incumbent leader will fall for sure if $1-\Phi\left((\overline{\theta}_i-\theta)/\sigma\right)<\mu \Leftrightarrow \theta<\overline{\theta}_i-\sigma\Phi^{-1}(1-\mu)$, which again is true by hypothesis. The expected net payoff of voting for x for PB i is then given by $r-e-v(\theta_i)$, and optimality implies $\xi_i^p(\theta_i;r)=x$ if $\theta_i>\overline{\theta}_i$ and $\xi_i^p(\theta_i;r)=q$ if $\theta_i<\overline{\theta}_i$.

Q.E.D.

1.3.1 Uniqueness of Equilibrium in Party Votes

The assumption that the distribution of party members' preferences is common knowledge among PBs, however, is not desirable per se. Moreover, as recent developments in the global games literature show, relaxing this assumption allows us to pin down a unique equilibrium (see Morris and Shin 1998, 2001, 2003, and Frankel, Morris and Pauzner 2003). The basic results are summarized in Proposition 1.1: when PBs are uncertain about the central tendency of the party *(i)* there exists a symmetric equilibrium in which PBs employ switching strategies with a cutpoint $\delta_p\in(\underline{\theta}_i,\overline{\theta}_i)$. Moreover, *(ii)* this equilibrium is unique provided that the uncertainty about the central tendency of the party (as parameterized by η) is high enough. The cutpoint δ_p, which completely characterizes this equilibrium, is pinned down by the net expected value

attached by the critical player with ideal policy δ_p to the promises of electoral benefits made by the incumbent leader.

Consider a symmetric strategy profile in which PBs employ switching strategies with an arbitrary cutpoint δ. Denote by $\Pi(\theta_i;\delta)$ the net expected benefit of supporting x for a PB with ideal policy θ_i given this strategy profile. Similarly, denote by $\Gamma(\theta;\delta)$ the proportion of PBs voting for x according to this strategy profile given a particular realization of θ. Since $\theta_i|\theta \sim N(\theta,\sigma^2)$, then $\Gamma(\theta;\delta) = 1 - \Phi\left((\delta - \theta)/\sigma\right)$, where $\Phi(\cdot)$ is the c.d.f. of the standard normal. Hence $\Gamma(\theta;\delta) < \mu \Leftrightarrow \theta < \delta - \sigma\Phi^{-1}(1-\mu)$, so that

$$\Pi(\theta_i;\delta) = r + e[\Pr(\theta < \delta - \sigma\Phi^{-1}(1-\mu)|\theta_i)] - v(\theta_i)$$

By Bayes' Law, $\theta|\theta_i \sim N(\hat{\theta}(\theta_i),\eta^2)$, where $\hat{\theta}(\theta_i) \equiv \frac{(\sigma^2\theta_0+\eta^2\theta_i)}{(\sigma^2+\eta^2)}$ and $\hat{\eta} \equiv \frac{\sigma\eta}{\sqrt{(\sigma^2+\eta^2)}}$. We then define the function

$$P(\delta;\theta_i) \equiv 1 - 2\Phi\left(\left(\frac{\theta - \hat{\theta}(\theta_i)}{\hat{\eta}}\right)_{\theta=\delta-\sigma\Phi^{-1}(1-\mu)}\right) \qquad (1.1)$$

Intuitively, $P(\delta;\theta_i)$ is the net expected value of a dollar of electoral benefits made conditional on supporting the incumbent leader's party line for an individual with ideal policy θ_i, when every PB uses a switching strategy with cutoff point δ. Then:

$$\Pi(\theta_i;\delta) = r + eP(\delta,\theta_i) - v(\theta_i)$$

Denoting by $p(\delta) \equiv P(\delta, \delta)$ the net expected value of a dollar of electoral benefits for the critical PB with ideal policy δ, and letting $\pi(\delta) \equiv \Pi(\delta; \delta)$, we have

$$\pi(\delta) = r + ep(\delta) - v(\delta)$$

Lemma 1.3 in the appendix shows that *(i)* $p(\cdot)$ is a decreasing function, and that *(ii)* $|p'(\cdot)|$ is bounded above by a decreasing function of η which goes to zero as $\eta \to \infty$.[10] Since by A1 the slope of $v(\cdot)$ is bounded away from zero, this implies that for sufficiently high η, $\pi(\cdot)$ is an increasing function and $\pi(\delta) = 0$ at exactly one point.

Proposition 1.1 is then a rather straightforward application of similar results in the global games literature (see Morris and Shin 1998, 2001 and 2003, and Frankel, Morris and Pauzner 2003):

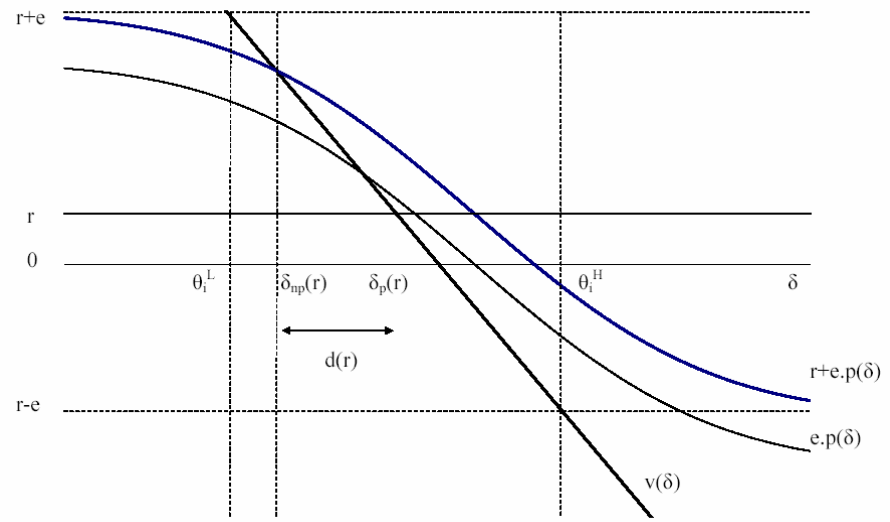
Proposition 1.1. *Let* $\delta_p \in \{\delta : \pi(\delta) = 0\} \neq \emptyset$. *There exists a symmetric equilibrium of the party vote game in which* $\xi_i^p(\theta_i; r) = x$ *for all i such that*

[10] To grasp the intuition for this result, note that this is equivalent to saying that a more "right-winged" critical PB assigns a higher probability to the incumbent being overthrown. Note, then, that increasing δ *(i)* increases the cutoff point determining whether other PBs will support or challenge the incumbent (vote for x or q), and *(ii)* changes the beliefs of the critical PB concerning the central tendency of the party. Since the c.d.f. of θ conditional on θ_i is stochastically increasing in θ_i, a more right-winged critical PB will consider less likely that the incumbent will be overthrown. This effect, however, is dampened by the prior beliefs. As a result, the increase in the cutoff dominates, producing the result. The second result follows from the same logic, since increasing η diffuses the prior, and thus diminishes the "dampening" of the change in beliefs.

$\theta_i > \delta_p$ *and* $\xi_i^p(\theta_i; r) = q$ *for all i such that* $\theta_i < \delta_p$. *Moreover, there exists a* $\overline{\eta}$ *such that whenever* $\eta > \overline{\eta}$, $\{\delta : \pi(\delta) = 0\}$ *has a single element* δ_p, *and this equilibrium is unique.*

Proof. See Appendix 1.A.

FIGURE 1.1 Equilibrium in Partisan and Non-partisan Votes



1.4 Party Discipline and Vote Buying

In this section, we turn to the substantive analysis leading to the main conclusions of the paper. In doing so, we assume throughout that the condition in Proposition 1.1 is met. We start by making precise the

definition of party discipline that we will employ in the remainder of the paper.

1.4.1 Party Discipline: A Definition

The informal definition of party discipline advanced in the introduction referred to the ability of party leaders to influence the voting behavior of PBs with party resources (resources that can only be distributed among party members; i.e., electoral benefits). This brief section has the double purpose of providing a rationale for this definition, and of making it more precise. The definition we will employ is as follows:

Definition 1.1. *Define party discipline*, $d:[0,R]\rightarrow \Re$ *, by*

$$d(r) \equiv \inf\{\theta_i : \xi_i^{np}(\theta_i;r) = x\} - \inf\{\theta_i : \xi_i^{p}(\theta_i;r) = x\}$$

That is, given an allocation r of pork to party members, we define party discipline as the difference between the ideal policy of the most left-winged PB supporting the incumbent's party line in a non-partisan vote, and that of the most left-winged PB supporting the party line in a party vote. By Remark 1.1 and Proposition 1.1, then, it follows that:

Remark 1.3. *(i)* $d(r) = \delta_{np} - \delta_p$ *, and (ii)* $d(r) > 0 \Leftrightarrow p(\delta_p) > 0$

Point *(ii)* above simply notes that discipline is positive if and only if the critical PB δ_p assigns positive (net) value to the promises of electoral benefits of the incumbent leader.

This definition satisfies several appealing properties. First, a useful definition of party discipline must distinguish between the non-partisan and the partisan frameworks. Specifically, party discipline should not reflect unity in voting that is driven by the absence of conflict between PBs over their preferred alternative. Instead, party discipline must indicate the ability of the party, and in particular of the party leadership, to mold PBs' behavior. This is in the spirit of Krehbiel 1993, Cox and McCubbins 1993, and Tsebelis 1995, and is now standard in the recent literature.[11] The comparison of the partisan and non-partisan thresholds δ_p and δ_{np} accomplishes this demand without being (directly) influenced by the distribution of preferences within the party (e.g., heterogeneity of PBs' preferences, σ). The notion we introduce differs from what is the norm in the literature in the choice of the non-partisan framework to employ. In particular, this definition does not include changes in party members' voting behavior that are achieved with resources that could

[11] Krehbiel 1993 makes the point sharply: "[D]o legislators vote with fellow party members in spite of their disagreement about the policy in question, or ... because of their agreement about the policy in question?" In the same vein, Cox and McCubbins 1993 argue that "[I]nvestigations of parties as floor voting coalitions ought to be conducted in terms of loyalty to party leaders and not, as has usually been done in the previous literature, in terms of general party cohesion". Similarly, Tsebelis 1995 differentiates discipline – "the ability of parties to eliminate dissent *after* a decision is made" - from cohesion - "the size of differences [in policy preferences] *before* the discussion" (italics in original).

have otherwise been destined to non-party members (i.e., pork). This view emphasizes that allocating pork to party members means having to buy their support, and is therefore not an indication of power within the organization.

1.4.2 Conditional Party Governance

We consider first the situation in which the incumbent leader is not protected by supermajority requirements for removal ($\mu = 1/2$), and no pork is allocated to party members ($r = 0$). We show that in this setting, credible promises of electoral benefits confer only limited strength to the party leader, and a result similar to Aldrich and Rohde's conditional party governance emerges: the incumbent leader will use electoral benefits to support the party line only if the leadership's incentives are aligned (ex ante) with those of the majority of the party. Recall that θ_0 denotes the ideal policy of the ex ante party median. Then:

Proposition 1.2. *Let $R = 0$ and $\mu = 1/2$ be given. Then (i) party votes occur in equilibrium if and only if $v(\theta_0) < 0$ (i.e., θ_0 prefers x to q), and (ii) in party votes, the ex ante median is in the incumbent's coalition: $\delta_p \leq \theta_0$.*

Proof. First note that the incumbent will call a party vote in equilibrium if and only if discipline is positive. Now,

$d(r) = \delta_{np} - \delta_p \geq 0 \Leftrightarrow\ p(\delta_p) \geq 0$. That is, discipline is positive if and only if the critical PB δ_p assigns net positive value to the incumbent's promises of electoral benefits. But with $\mu = 1/2$, $p(\delta_p) \geq 0 \Leftrightarrow\ \delta_p \leq \theta_0$, because

$$\Pr(\Gamma(\theta;\delta_p) < \mu|\theta_i = \delta_p)) = \Pr(\theta < \delta_p|\theta_i = \delta_p)) < 1/2 \Leftrightarrow\ \delta_p < \theta_0$$

That is, with $\mu = 1/2$, the critical PB δ_p assigns net positive value to the incumbent's promises of electoral benefits if and only if the ex ante party median is in the incumbent's coalition (iff $\delta_p < \theta_0$). Hence $d \geq 0 \Leftrightarrow\ \delta_p \leq \theta_0$. Now, with $r = 0$, $\delta_{np} = v^{-1}(0)$, and then $v(\delta_{np}) = 0$. Since $ep(\delta)$ is continuously decreasing, but everywhere flatter than $v(\delta)$, then $\delta_{np} \leq \theta_0 \Leftrightarrow\ \delta_p \leq \delta_{np} \Leftrightarrow\ d \geq 0$. Finally, θ_0 prefers x to q iff $\delta_{np} = v^{-1}(0) \leq \theta_0$, implying that θ_0 prefers x to q iff $d \geq 0$.

Q.E.D.

Note that this result holds independently of the level of electoral benefits available to the incumbent leader. Thus, Proposition 1.2 shows in a crude way that even if credible per se, and significant in amount, promises of electoral benefits do not necessarily have influence over policy outcomes. This is specially so under the conditions assumed in the proposition. In this case, the incumbent will choose to allocate electoral benefits to PBs conditionally on their support of the incumbent's party

line only when the leadership's policy preferences are aligned (ex ante) with those of the majority of the party.

Furthermore, the power that electoral benefits confer to the leadership in this environment can be attributed entirely to the heterogeneity of policy preferences among party backbenchers.

Proposition 1.3. *Let* $R = 0$ *and* $\mu = 1/2$ *be given. In equilibrium, discipline in party votes decreases with the homogeneity of PBs' preferences, and* $\lim_{\sigma \to 0} d = 0$

While the proof of this result is deferred until Proposition 1.6 - which contains it as a special case – we provide here the basic logic behind this result.[12] Recall that PBs use both *(i)* public information about the central tendency of the party and *(ii)* the information contained in their own preferences to form beliefs about the distribution of fellow party members' preferences (and thus ultimately about their actions). The need to anticipate the reaction of other party legislators is due to the basic coordination problem arising between legislators willing to oppose the incumbent's mandate.

Central for any PB in this problem is comparing his preferences with those of other party members. When party members' preferences are heterogeneous, only the ex ante median believes he is "centrist", attaching

[12] A full discussion of the result is included as Appendix 1.B, which complements the more efficient but less revealing formal proof in Proposition 1.6.

equal probability to any member having ideal policy higher or lower than his own. PBs with ideal policy $\theta_i < \theta_0$, instead, believe that a majority of the party is to the left of the ex ante median. The informational content of a PB's ideal policy, in turn, increases with the homogeneity of the party. This implies, in particular, that PBs with ideal policy $\theta_i < \theta_0$ will attach a higher probability to the incumbent being overthrown (and thus a lower value to her promises of electoral benefits) the more homogeneous the party is.

Note, however, that we are not concerned with how any arbitrary PB forms its beliefs, but with how the critical PB δ_p does. But we know from Proposition 1.2 that when the incumbent can be overthrown by a simple majority of rebelling PBs, the critical PB δ_p assigns positive value to the incumbent's promises of electoral benefits only if the ex ante median is in the incumbent's coalition; i.e., only if $\delta_p < \theta_0$. The argument in the previous paragraph then implies that if discipline is positive, it must decrease with an increase in the homogeneity of PBs' preferences.

Opposite to the case of heterogeneous preferences, where as we noted only the ex ante median believes he is "centrist", in the limit as σ goes to zero every individual believes he is "centrist" (as no weight is given to the ex ante median). But then for the critical PB, whose ideal policy coincides with the symmetric strategy's cutoff point, electoral benefits offered by the incumbent must have no value. This means that electoral benefits will

have no bite in equilibrium, and therefore discipline must vanish in equilibrium as σ goes to zero.

1.4.3 Vote Buying

The analysis so far assumed that the incumbent could be overthrown by a simple majority of PBs, and that the incumbent could not use resources other than the partisan electoral benefits to sway legislators' behavior. In this section, we relax these assumptions. We show that while both innovations have the unambiguous effect of increasing the leader's power, they also have substantively different repercussions with respect to party backbenchers, the relation of the leader with the party, and the formation of legislative coalitions.

Being endowed with pork, the incumbent can now buy the support of legislators in the opposition. This, however, has an opportunity cost, as buying the opposition means weakening the support inside the party. The key to the results in this section is that this cost is magnified in a party vote as a result of a complementarity between the allocation of pork to party members and the value of electoral benefits. In a non-partisan vote - where PBs' beliefs about the actions of fellow party members are irrelevant - decreasing the allocation of pork to the party by one dollar leads to an equivalent reduction in the value of the incumbent's offer. In a party vote, instead, the value of the incumbent's promises of electoral benefits is tied to the fate of the leader. But the reduction in the allocation of pork to party members will lead PBs to anticipate a lower aggregate

support for the party line and, as a result, a higher probability of the incumbent being overthrown. This reduction in the allocation of pork to party members will thus lead to a depreciation of the value of the incumbent's promises of electoral benefits, and hence to a more than proportional effect over the net value of the incumbent's offer.

The first implication of this logic is in the impact of endowing the leader with pork resources upon what we have dubbed conditional party governance. In the context of the previous section we showed (Proposition 1.2) that party benefits were used to favor the party line only when - according to public information - the majority of the party preferred the party line to the legislative alternative. When the incumbent can influence legislators' decisions with pork, however, party votes can exist in equilibrium even if θ_0 prefers q to x. Nevertheless, in the absence of a supermajority requirement for removal of the leader, the influence of backbenchers is not lost, but only reshaped in terms of a lower bound of payments that needs to be allocated to party members for party resources to be in play. In particular, the allocation of pork to party members has to be at least as large as to attain the support of the (ex ante) party median. The simple result follows, in effect, from the proof of Proposition 1.2, and is stated in the following remark.

Remark 1.4. *Let* $\mu = 1/2$. *If there is a party vote in equilibrium,* $r \geq -v(\theta_0)$

Raising the bar for removal of the incumbent leader, instead, directly reduces the influence (and well-being) of backbenchers. Party discipline increases with the protection to the incumbent $1-\mu$, and therefore internal dissent is reduced even in the absence of compensations. Indeed, for every $\mu \in (0,1/2]$ there is a $r_{\min}(\mu)$ such that $r_p(\mu) \geq r_{\min}(\mu)$ for a party vote to be possible in equilibrium. Moreover, it can be easily verified that $r_{\min}(\mu)$ is an increasing function, with maximum at $r_{\min}(1/2) = -v(\theta_0)$.

Furthermore, the next proposition shows that when party votes occur in equilibrium, the incumbent will allocate less pork to buy opposition legislators the more contestable the leadership position is. In essence, the result is due to the fact that increasing the contestability of the leadership boosts the complementarity between pork and the value of electoral benefits. In this situation, "weak" leaders find more profitable buying their own party, thus avoiding large depreciations of the value of the electoral benefits at their disposal.

Proposition 1.4. *Suppose that the incumbent would make a party vote with* $\mu = \mu^0$ *and that* $\mu^1 < \mu^0$. *Then* $r_p(\mu^0) \geq r_p(\mu^1)$, *and the inequality is strict if* $r_p(\mu^1) \in (r_{\min}(\mu^1), R)$

Proof. The first step is to characterize optimal allocations of pork to party members under rule μ, $r_p(\mu)$. Let $H(\cdot) \equiv [1-G(v^{-1}(\cdot)]$. The mass of

legislators in the opposition voting for x given pork offer r_o is given by $H(r_o)\beta$. Note that $H'(r_o) \geq 0$ for all r_o. Pork resource constraint is given by $r_o\beta + r \leq R$. Since this will hold with equality in the optimum, we write $r_o = (R - r)/\beta$. Conditional on θ then, y=x iff

$$H(R - r/\beta)\beta + \Gamma(\theta, \delta_p(r, \mu)) \geq (1 + \beta)/2$$

Since $\Gamma(\theta, \delta_p(r, \mu)) = 1 - \Phi((\delta_p(r, \mu) - \theta)/\sigma)$, this is

$$\theta \geq \delta_p(r, \mu) - J(r)$$

, where $J(r) \equiv \sigma\Phi^{-1}((1 - \beta)/2 + H((R - r)/\beta)\beta)$. Then for the incumbent,

$$\Pr(y = x) = 1 - \Phi\left(\frac{1}{\hat{\eta}}\left[(\delta_p(r, \mu) - \theta_0) - J(r)\right]\right)$$

An optimal allocation of pork for the incumbent $r_p(\mu)$ maximizes $\Pr(y = x)$. The FOC is:

$$\left|\frac{\partial \delta_p(r_p(\mu), \mu)}{\partial r}\right| - J'(r_p(\mu)) \begin{cases} > 0 & and \quad r_p(\mu) = R \\ = 0 & and \quad r_p(\mu) \in (r_{\min}(\mu), R) \\ < 0 & and \quad r_p(\mu) = r_{\min}(\mu) \end{cases} \qquad (1.2)$$

The second and final step is to show that for all r

$$\left|\frac{\partial \delta_p(r, \mu^0)}{\partial r}\right| > \left|\frac{\partial \delta_p(r, \mu^1)}{\partial r}\right| \quad if \quad \mu^0 > \mu^1 \qquad (1.3)$$

, which implies that

$$\left|\frac{\partial \delta_p(r_p(\mu^1), \mu^0)}{\partial r}\right| > \left|\frac{\partial \delta_p(r_p(\mu^1), \mu^1)}{\partial r}\right| \quad if \quad \mu^0 > \mu^1 \qquad (1.4)$$

Then (1.4) together with (1.2) will implies that $r_p(\mu^0) \geq r_p(\mu^1)$. Moreover, if $r_p(\mu^1) \in (r_{\min}(\mu), R)$, so that $\left|\partial \delta_p(r_p(\mu^1), \mu^1)/\partial r\right| = J'(r_p(\mu^1))$, then $\left|\partial \delta_p(r_p(\mu^1), \mu^0)/\partial r\right| = J'(r_p(\mu^1))$, and hence $r_p(\mu^0) > r_p(\mu^1)$.

Note that for all (r, μ),

$$\left|\frac{\partial \delta_p(r,\mu)}{\partial r}\right|^{-1} = \left|\frac{\partial v(\delta_p(r,\mu))}{\partial \delta}\right| - e\left|\frac{\partial p(\delta_p(r,\mu);\mu)}{\partial \delta}\right|$$

so that (1.3) can be written as:

$$e\left\{\left|\frac{\partial p(\delta_p(r,\mu^0);\mu^0)}{\partial \delta}\right| - \left|\frac{\partial p(\delta_p(r,\mu^1);\mu^1)}{\partial \delta}\right|\right\} > \left|\frac{\partial v(\delta_p(r,\mu^0))}{\partial \delta}\right| - \left|\frac{\partial v(\delta_p(r,\mu^1))}{\partial \delta}\right| \qquad (1.5)$$

Note, next, that since in a party vote $\delta_p(r,\mu)$ is increasing in μ, then $\delta_p(r,\mu^1) < \delta_p(r,\mu^0)$. Assumption (A1) then implies that

$$\left|v'(\delta_p(r,\mu^1))\right| > \left|v'(\delta_p(r,\mu^0))\right| \qquad (1.6)$$

Also, since

$$\left|\frac{\partial p(\delta;\mu)}{\partial \delta}\right| = 2\phi\left(\frac{1}{\hat{\eta}}\left[\frac{\sigma^2}{\sigma^2+\eta^2}(\delta-\theta_0) - \sigma\Phi^{-1}(1-\mu)\right]\right)\frac{1}{\eta}\frac{1}{\sqrt{1+\eta^2/\sigma^2}}$$

, it can be verified that if *d>0* then $\frac{\partial}{\partial \mu}\left(\left|\frac{\partial p(\delta;\mu)}{\partial \delta}\right|\right) > 0$, so that

$$\left|\frac{\partial p(\delta_p(r,\mu^0);\mu^0)}{\partial \delta}\right| > \left|\frac{\partial p(\delta_p(r,\mu^0);\mu^1)}{\partial \delta}\right| \qquad (1.7)$$

, and that *(ii)* $\frac{\partial^2 p(\delta;\mu)}{\partial \delta^2} < 0$, so that $\delta_p(r,\mu^0) > \delta_p(r,\mu^1)$ implies that

$$\left|\frac{\partial p(\delta_p(r,\mu^0);\mu^1)}{\partial\delta}\right| > \left|\frac{\partial p(\delta_p(r,\mu^1);\mu^1)}{\partial\delta}\right| \tag{1.8}$$

Then (1.7) and (1.8) imply that

$$\left|\frac{\partial p(\delta_p(r,\mu^0);\mu^0)}{\partial\delta}\right| > \left|\frac{\partial p(\delta_p(r,\mu^1);\mu^1)}{\partial\delta}\right| \tag{1.9}$$

Then (1.6) and (1.9) imply that (1.6) holds.

Q.E.D.

1.4.4 Cohesion and Discipline Revisited

In the context of Section 1.4.2 we showed that in equilibrium, discipline in party votes decreases with the homogeneity of PBs' preferences. Proposition 1.6 revisits this result, allowing for arbitrary majority requirements for removal and allocations of pork to party members. The proposition shows that provided $\mu = 1/2$, the result does generalize to arbitrary $r \leq R$ as stated. When $\mu < 1/2$, instead, the main intuition described above breaks down, and this is no longer the case. The gist of the argument is that with $\mu < 1/2$, it is possible for the ex ante party median to be in the rebelling coalition, while still having positive discipline. When this is the case, the same argument used in Proposition 1.3 shows that an increase in the heterogeneity of preferences will now diminish discipline.[13] Note, however, that this happens for relatively low

[13] In addition to the discussion in Appendix B, the case of $\mu < 1/2$ adds an additional element to the analysis. This, however, reinforces the positive effect of heterogeneity on party discipline. For any given cutoff δ, the minimum value of θ for which the

levels of discipline, where (ex ante) a majority of the party opposes the party leader's mandate.

Proposition 1.5. *Let* $\mu = 1/2$ *and* $r \in [0, R]$ *be given. In equilibrium, discipline in party votes decreases with the homogeneity of PBs' preferences, and* $\underset{\sigma \to 0}{Lim}\, d = 0$. *With* $\mu < 1/2$*, however, this is not necessarily so, and* $\underset{\sigma \to 0}{Lim}\, d > 0$

Proof. Note first that

$$p(\delta) = P(\delta, \delta) = 1 - 2\Phi\left(\frac{1}{\hat{\eta}} \left[\frac{\sigma^2}{\sigma^2 + \eta^2} (\delta - \theta_0) - \sigma \Phi^{-1}(1-\mu) \right] \right)$$

, where

$$\frac{1}{\hat{\eta}} \left[\frac{\sigma^2}{\sigma^2 + \eta^2} (\delta - \theta_0) - \sigma \Phi^{-1}(1-\mu) \right] = \left(\frac{\theta - \hat{\theta}(\theta_i = \delta)}{\hat{\eta}} \right)_{\theta = \delta - \sigma \Phi^{-1}(1-\mu)}$$

Thus

$$\frac{\partial p(\delta;\sigma)}{\partial \sigma} = -2\phi(\cdot) \frac{1}{\sqrt{\sigma^2 + \eta^2}} \left[\frac{\eta}{\sigma^2 + \eta^2} (\delta - \theta_0) - \frac{\sigma}{\eta} \Phi^{-1}(1-\mu) \right]$$

, so that $\partial p(\delta;\sigma)/\partial \sigma \geq 0$ if and only if:

$$\theta_0 \geq \delta_p - \sigma \Phi^{-1}(1-\mu) \left(1 + \frac{\sigma^2}{\eta^2} \right) \tag{1.10}$$

---

incumbent would not be overthrown, $\delta - \sigma\Phi^{-1}(1-\mu)$, is decreasing in the majority required to successfully overthrow the incumbent $1-\mu$. This effect, furthermore, is proportional to the heterogeneity of PBs' preferences; i.e., the more heterogeneous the party is, the more extreme θ has to be in order for a supermajority of the party to join in the challenge to the incumbent leader. (while an increase in σ increases the probability of extreme events - see appendix 1.B - this is outweighed by the direct effect of the change in the critical central tendency of the party described above).

But if $p(\delta;\sigma)$ increases with σ at $\delta_p(\sigma')$, then $\sigma''>\sigma'\Rightarrow\delta_p(\sigma'')<\delta_p(\sigma')$. Hence more heterogeneity of PBs' preferences must in this case increase discipline. Similarly, if $p(\delta;\sigma)$ decreases with σ at $\delta_p(\sigma')$, then more heterogeneity of PBs' preferences must in this case reduce discipline. Now,

$$d \geq 0 \Leftrightarrow p(\delta_p) \geq 0 \Leftrightarrow \left(\frac{\theta - \hat{\theta}(\theta_i = \delta_p)}{\hat{\eta}} \right)_{\theta=\delta_p-\sigma\Phi^{-1}(1-\mu)} \leq 0$$

That is, $d \geq 0$ if and only if

$$\theta_0 \geq \delta_p - \sigma\Phi^{-1}(1-\mu)\left(1+\frac{\eta^2}{\sigma^2}\right) \tag{1.11}$$

Hence, in equilibrium, discipline in party votes necessarily increases with σ if (1.10) is satisfied whenever (1.11) is. Since δ_p is a continuously decreasing function of θ_0, bounded below by $\underline{\theta_i} \equiv v^{-1}(r+e)$ and above by $\overline{\theta_i} \equiv v^{-1}(r-e)$, there is a unique θ_0^* solving (1.10) with equality, and a unique θ_0^{**} solving (1.11) with equality. If $\mu = 1/2$, these two inequalities collapse to $\theta_0 \geq \delta_p$. Therefore in equilibrium, discipline in party votes necessarily increases with σ. Moreover, $\delta_p = \theta_0 \Leftrightarrow p(\delta_p) = 0 \Leftrightarrow \theta_0 = v^{-1}(r)$, so that $\theta_0^* = \theta_0^{**} = v^{-1}(r)$. With $\mu < 1/2$, however, (1.10) is satisfied whenever (1.11) is only if $\sigma \geq \eta$.

The results for the limit as $\sigma \to 0$ follow from Lemma 1.4 in the appendix, which shows that

$$\lim_{\sigma \to 0} d = v^{-1}(r) - v^{-1}(r + e[1 - 2\mu])$$

Q.E.D.

1.5 Extension: Endogenous Challenge

In the setting of the basic model, we assumed that challenges to the incumbent party leader occurred if and only if she made the vote a party vote. In this section we endogeneize the challenge. Given the lesser role of pork in this stage, we take an allocation r as given, and focus instead on the characteristics of the policy alternative being supported by the incumbent leader.[14] We show that under the assumptions in this section, *(i)* the incumbent is only challenged in party votes. Moreover, we distinguish two sets of alternatives x possibly being supported by the incumbent leader in party votes: a set of "moderate" policies $\{x : q \le x \le \tilde{x}\}$ and a set of "radical" policies $\{x : x \ge \tilde{x}\}$. We show that *(ii)* the incumbent is not challenged in party votes for moderate policies, but always challenged in party votes for radical policies. The basic model is thus a stylized description of this extended framework.

[14] In our formulation, pork allocations are unalterable, and therefore are not the prime determinants of challenges to the incumbent leader. The central elements, instead, are given by the policy alternatives being considered and the allocation of electoral benefits.

After reviewing the amendments we impose to the model, we provide a formal statement of these results, and note its implications for the uniqueness of equilibrium outcomes.

1.5.1 The Extended Model

We consider the following "challenge technology". After the incumbent's choice, PBs in a given set of potential challengers Ω simultaneously decide whether they will propose or not a challenge to the incumbent leader. We assume that the preferences of potential challengers are common knowledge, that $\{\theta_i : i \in \Omega\}$ is compact, and let $\underline{\omega} \equiv \min\{\theta_i : i \in \Omega\}$. A challenge occurs if some potential challenger $i \in \Omega$ proposes a challenge. Denoting the challenge decision of individual $i \in \Omega$ by $c_i(\theta_i; x) \in \{0,1\}$, and by $c(x) \in \{0,1\}$ the occurrence of a challenge, then $c(x) = 1$ whenever $c_i(\theta_i; x) = 1$ for some $i \in \Omega$ and $c(x) = 0$ otherwise. Proposing the challenge is costless, and provides no special benefits (in the event the challenge is successful) *vis a vis* the remaining PBs opposing the incumbent leader.

We modify the definition of equilibrium to exclude equilibria containing weakly dominated strategies. We also impose the following additional assumption about PBs' preferences (replacing A1):[15]

[15] Again, this is satisfied by a quadratic utility function $u(x_i; \theta_i) = -b(x_i - \theta_i)^2$. Here $\overline{\alpha} = \underline{\alpha} = 2b$.

Assumption (A1'). For every x, there exist $\bar{\alpha} \geq \underline{\alpha} > 0$ such that for all (θ_i, θ_i') with $\theta_i' > \theta_i$,

$$\bar{\alpha}(x-q)(\theta_i' > \theta_i) \geq v(\theta_i; x) - v(\theta_i'; x) \geq \underline{\alpha}(x-q)(\theta_i' > \theta_i)$$

For given q and x, (A1') bounds the change in $v(\theta_i)$ above and below. It also requires the bounds $\bar{\alpha}(\theta_i' > \theta_i)$ and $\underline{\alpha}(x-q)$ to hold for any $x > q$ once corrected by the distance $x-q$.

1.5.2 Main Result, and Implications for Uniqueness of Equilibrium Outcomes

Proposition 1.1 showed that given any pair of policy alternatives (q, x), the party vote game has a unique equilibrium provided there is sufficient uncertainty about the central tendency of the party. Specifically, keeping q fixed, we have shown that for any x there is a $\bar{\eta}(x)$ such that a party vote equilibrium is unique whenever $\eta > \bar{\eta}(x)$. Under reasonable assumptions about preferences, however, $\bar{\eta}(x)$ decreases with $|x-q|$, and $\lim_{x \to q} \bar{\eta}(x) = \infty$. Thus for fixed η, there is an x sufficiently close to q such that $\eta < \bar{\eta}(x)$, and the sufficient condition for uniqueness is not met.

Note, however, that while the absence of policy-driven conflict allows for multiple resolutions of a challenge should one occur, it also diminishes

the benefit of mounting the challenge in the first place. Proposition 1.6 shows that if PBs are sufficiently uncertain about the distribution of fellow party members preferences, and challengers do not use weakly dominated strategies, challenges occur in equilibrium only for "radical" alternatives, and these always have a unique resolution.

Proposition 1.6. *There exists a* $\bar{\eta}$ *such that for all x>q, whenever* $\eta > \bar{\eta} : c(x) = 1 \Rightarrow \eta > \bar{\eta}(x)$. *Moreover, for each* $\eta > \bar{\eta}$ *there exists a* $\tilde{x}_\eta \in \Re$ *such that* $c(x) = 1 \Leftrightarrow x \geq \tilde{x}_\eta$

Proof. The result is implied by Remark 1.6, Lemma 1.5 and Lemma 1.6 in Appendix 1.A.

Q.E.D.

1.6 Relation with the Literature

Students of political parties unanimously agree in that parties are not "horizontal" organizations, but rather are characterized by having a hierarchical structure, in which leadership posts can be clearly distinguished from the rank and file.[16] The creation of a leader - which is

[16] "We must nonetheless take account of the established fact (established by a lot of empirical research of parties) that the principal power resources tend to be concentrated in the hands of small groups. Michels' oligarchy, Duverger's 'inner circle', Ostrogorski and Weber's 'ceasaristic-plebiscitarian dictatorship' are just a few examples which bring this phenomenon to mind." (Panebianco 1988).

also a characteristic of congressional parties - has been rationalized as an optimal institutional response, (implicitly) agreed upon by party members in a "constitutional stage", and designed to further the welfare of the collective. For Kiewit and McCubbins 1991, for example:

> "[I]t is the delegation of authority to a central agent to lead or manage the organization that is the key to overcoming problems of collective action .... In the case of congressional parties, leaders can exploit the prominence of their position to identify a focal point, thus solving problems of coordination by rallying support around one of possibly many acceptable alternatives."

With the possible exception of small or regionally concentrated parties, however, legislative parties bundle together individuals with significantly heterogeneous policy preferences. Structuring collective action in parties thus also involves resolving, to one way or the other, diverging views among party members. As a result of this, the definition of who occupies the leadership, and what the "party line" is, expresses the resolution of power struggles inside the party:

> "Power equilibria within the coalition can be altered at any moment .... A dominant coalition is therefore always a potentially precarious construction. It disintegrates due to the pressure of [minority elites] ... because of internal conflicts due to changes in its internal distribution of power." (Panebianco 1988)

, or:

> "The key determinant of the desirability of checks within the structure of party leadership is the degree of homogeneity in

> the policy preferences of the membership ... when the party caucus is riven by serious policy disputes, there is more support for checks. Without them, one faction, upon gaining control of the machinery of leadership, might pursue policies that are anathema to another faction, thereby weakening or even splintering the party." (Kiewit and McCubbins 1991)

A similar view in fact emerges in the works of Aldrich and Rohde 1998, Cox and McCubbins 1993, and Calvert 1987.[17,18] Understanding the determinants of the power of legislative leaders over their "followers" is thus crucial to determine how preferences of party members are aggregated to produce partisan outcomes. In this area there is, however, much less theoretical agreement.

At one extreme, exemplified by Michels' iron law of oligarchy (Michels 1958), party leaders "are not checked by those who hold subsidiary positions within the organization" (Casinelli 1953). In this view, parties "never operate 'democratically' - i.e., rule by the rank-and-file rather than by the leaders." (Schonfeld 1981), and "the rank and file are manipulated into accepting policies with which they would not otherwise agree, and which are not in their interests, or at least are primarily in the interests of

[17] In the case of Calvert, the same notion appears with a different emphasis: "In general the leader's goals do not correspond exactly with an abstract notion of political welfare for the group, and in any event the leader's goals will probably differ from those of any individual follower. Thus a rational, utility-maximizing leader will pursue collective action for the group in such a way that his own goals are achieved." (Calvert 1987)

[18] It should be noted, however, that in both Aldrich and Rodhe's and Cox and McCubbins's view, the rank and file will not delegate the powers to the leadership unless their views are sufficiently homogeneous. When they are, instead, this delegation will occur, and the structure of the leader's incentives will make her "internalize the goals of the members, and therefore behave to a large extent in the party members' best interest". (Cox and McCubbins 1993). We return to this point below.

the leadership group." (Hands 1971). At the opposite extreme of the spectrum, most studies of parties in the rational choice camp (inspired by, and mostly applied to, contemporary parties in the U.S.) conceived party leaders as agents of the rank and file. This being understood either in a strict principal-agent framework (see Fiorina and Shepsle 1989; Kiewit and McCubbins 1991) or in a broader sense, as in Aldrich and Rohde 1998.

As we have emphasized before, however, party leaders are never owners of the organization; power, instead, resides collectively in the "principals" (the backbenchers). On the other side, with the exception of a truly "constitutional" stage, incumbent leaders will not be neutral spectators of the decisions of the "principals".[19] These alternative views can thus be taken to represent opposite understandings - motivated in part by the observation of different realities - about the degree of difficulty for the rank and file to effectively coordinate in opposing their leaders; i.e., in constituting an effective check to the leader's power. While this coordination is precluded outright in the world of the iron law, it is assumed to work without frictions in the framework of Aldrich and Rohde.

[19] This observation - which is fairly evident for a vast number of countries - can also, according to Bowler, Farrel and Katz 1999, be taken as a feature of U.S. parties: "While it may be true that there is an asymmetry between leaders and followers, given that the former have access to patronage and the ability to play divide and rule, whereas the latter must overcome problems of collective action and rivalry, leaders can still be disciplined by the rank and file. ... At times, party leaders may seem more like generals guiding their disciplined troops into the lobbies. Examples such as Margaret Thatcher or Newt Gingrich suggest a highly cohesive and willing body of legislators, willing to do or die. ... At other times, however, parties are not nearly so compliant. ... The leader keeps the party together, but basically by herding people together while letting the party go where it wants (e.g. Sam Rayburn as Speaker of the U.S. House; John Major as Conservative Party leader in Britain)."

The explicit consideration of this coordination problem is then essential to understand the limits of the incumbent's power over legislators. This is, in fact, the approach of the paper. While in the past the assumption of common knowledge of preferences has precluded the fruitful analysis of this problem,[20] the developments in the global games literature (Carlsson and van Damme 1993, Morris and Shin 1998, 2001 and 2003, and Frankel, Morris and Pauzner 2003) allows us to study the properties of a unique equilibrium.

The different assumptions about how the coordination among backbenchers is resolved result in markedly different conclusions. In our framework, Proposition 1.3 shows that unless the incumbent is protected by a supermajority rule for removal, discipline in party votes can be entirely attributed to the heterogeneity of PBs' preferences; i.e., increases with heterogeneity of PBs preferences and vanishes in the limit as σ goes to zero. As can be noted from the previous quote of Kiewit and McCubbins 1991, this is indeed the same conclusion obtained in the social choice framework. This is, however, based on a different mechanic. In their case, more heterogeneity allows an agenda setter broader discretion. Our notion, instead, emphasizes that when preferences are private information, not only it is relevant the existence of opposition, but also that this becomes common knowledge among the group members.

[20] As radically different behavioral patterns could be sustained as equilibria by self fulfilling beliefs.

Moreover, based on the frictionless coordination between backbenchers alluded to earlier, Aldrich and Rohde 1995 take this result one step further:

> "If there is much diversity in preferences within a party, a substantial portion of the members will be reluctant to grant strong powers to the leadership, or to resist the vigorous exercise of existing powers, because of the realistic fear that they may be used to produce outcomes unsatisfactory to the members in question"

This paper emphasizes, instead, a markedly different timing and coordination of the collective (heterogeneous) principal. It is not the choice of a single PB, we argue, to "resist the vigorous exercise of existing powers". Moreover, except possibly in a truly constitutional stage, both resisting the exercise or removing existing powers will be a collective choice determined by the common knowledge of opposition to the incumbent.[21]

To sum up, although both views lead to the same conclusion regarding the effect of the heterogeneity of PBs' preferences over the influence of the leader, the empirical implications are diametrically opposed. In Aldrich and Rohde's and Cox and McCubbins' view, the "party effect" will be present when there is substantial agreement among party members. In the

[21] To some extent, a similar distinction applies to a remark advanced by Calvert 1987, who although based on a non-cooperative game, does not model explicitly the "collective action" problem of opposing the leader: "[T]he more heterogeneity there is among follower's interests, the less valuable will be the ongoing collective action maintained by the leader, because each follower is required to give up more in order for the group to accomplish common goals. ... The more heterogeneity among followers, then, the greater the temptation for followers to disobey. "

view advanced in this paper, instead, the party effect will be more important when the party is more heterogeneous.

1.7 Conclusion

Legislative Parties can be conceived as teams. In fact, this representation seems adequate when intra-party preferences are homogeneous, and inter-party preferences are heterogeneous. Party leaders here coordinate the actions of the members and enforce plans that further the interest of the group. Large, "catch-all" parties in modern democratic societies, however, usually cluster individuals with significantly heterogeneous views. In this case, conflict about the collective decisions emerge. Here the leadership not only solves pure coordination among members, but also embodies the resolution of power struggles inside the party. Understanding the factors determining the extent of the leader's power over backbenchers thus becomes essential to understanding the functioning of legislatures.

According to the main views prevailing in American Politics, "backbenchers rule". When internal dissent is high, they opt not to delegate power to a party leader. When they are homogeneous, instead, they grant powers to a leader, who in turn internalizes the objectives of the members. Opposite this view, in which coordination among the collective is assumed to be smooth, the analysis following the line of

Michels' Iron Law of Oligarchy, conceives party leaders as basically unchecked by the rank and file.

In this paper, we adopt an intermediate view, which in turn enables us to approach the relation between leader and "followers" in comparative perspective: ultimately, power always resides in the "principals", but only collectively. Thus, how coordination among opposing internal views is resolved, is essential to delimit the leader's power. This is specially relevant when resources that can not be delivered on the spot are used to influence behavior in the present, as in the case of promises of electoral benefits.

The central message of this paper is that even if credible per se, promises of electoral benefits (e.g., nominations) are insufficient to grant significant power to the party leader. Instead, in order to anchor beliefs in his favor and make her promises valuable, the incumbent needs either provide benefits on the spot, or be protected by a supermajority requirement for removal.

In particular, when neither of these conditions is present, electoral benefits will be used to support the party line only if (ex ante) a majority of the party prefers it to the legislative alternative. When endowed with pork, instead, the incumbent can make the electoral benefits valuable, even when ex ante a majority of the party opposes the party line. This is due to the fact that the link between the value of the incumbent's promises, and her ability to overcome contests to her authority, creates a complementarity between the allocation of pork to party members and the

value of electoral benefits. Moreover, since the multiplier effect of pork allocated to party legislators is higher the more exposed the incumbent is to internal threats, weaker (less protected) leaders will allocate less pork to buy opposition legislators, and more to buy members of their own party.

To sum up, the paper provides novel empirical implications for the comparative analysis of parties and legislatures. Even after controlling for other factors, the effect of nomination power over party discipline will depend on *(i)* the structure of the legislative party's institutions *(ii)* the heterogeneity of preferences among party backbenchers, and *(iii)* the leader's capacity to allocate resources on the spot (pork). This might help reconcile the theories of party discipline with the observed variation in voting behavior across parties in the same country (and thus subject to the rules of the same electoral system) and in the same party across time.

Moreover, the arguments presented in the paper provide an alternative view on why party leaders would "buy" the votes of fellow party members. The model predicts a subtle relationship between the allocation of pork, the power of nomination, and party's legislative institutions. More vulnerable leaders will enjoy - controlling for the distribution of pork - less power from nominations. It is precisely this type of leaders, however, who will also tend to allocate more pork to buy the support of members of their own party, increasing discipline as a result.

1.8 Appendix A

Proof of Proposition 1.1. The following definitions will be used here. For a given strategy profile of the party vote game $\{\xi_i^P\}$, where each $\xi_i^P:\Theta \times [0,R] \to \{q,x\}$, let $\chi(z)$ denote the proportion of PBs for whom $\xi_i^P(z;r) = x$, let $\Gamma(\theta;\chi)$ denote the proportion of PBs that would end up supporting x given a particular realization of θ and an aggregate voting mapping χ, and let $\Pi(\theta_i;\chi)$ denote the expected net benefit of supporting x for a PB with ideal policy θ_i, given χ.

Proposition 1.1 follows from three lemmas. In Lemma 1.1, we show that *(i)* $\{\delta:\pi(\delta) = 0\} \neq \varnothing$, and that *(ii)* with $\delta_p \in \{\delta:\pi(\delta) = 0\}$, there exists a symmetric equilibrium of the party vote game in which $\xi_i^P(\theta_i;r) = x$ for all i such that $\theta_i \geq \delta_p$ and $\xi_i^P(\theta_i;r) = q$ for all i such that $\theta_i < \delta_p$. In Lemma 1.2, we show that if $\pi(\delta)$ is strictly increasing $\{\delta:\pi(\delta) = 0\}$ has a single element δ_p, and this equilibrium is unique. The next step is thus to provide a sufficient condition for $\pi(\delta)$ to be strictly increasing. Note that this happens if and only if $ep'(\delta) > v(\delta)$ for every δ, and that we know already that $v(\cdot)$ is a strictly decreasing function. Lemma 1.3 shows that while $p(\cdot)$ is also a decreasing function, it can be made arbitrarily flat by reducing the precision of public information (by increasing η). Specifically, for any $Q>0$, there exist a $\bar{\eta}(Q)$ such that if $\eta > \bar{\eta}(Q)$, then

$|p'(\delta)| < Q$. Then $\pi(\delta)$ is strictly increasing if $\eta > \overline{\eta}(\frac{1}{e}|v'(\delta)|)$, and we are done.

Lemma 1.1. $\{\delta : \pi(\delta) = 0\} \neq \emptyset$. *Let* $\delta_p \in \{\delta : \pi(\delta) = 0\}$. *There exists a symmetric equilibrium of the party vote game in which* $\xi_i^P(\theta_i; r) = x$ *for all i such that* $\theta_i \geq \delta_p$ *and* $\xi_i^P(\theta_i; r) = q$ *for all i such that* $\theta_i < \delta_p$.

Proof. Our first task is to show that $\{\delta : \pi(\delta) = 0\} \neq \emptyset$. Consider the points $\underline{\theta_i} \equiv v^{-1}(r + e)$ and $\overline{\theta_i} \equiv v^{-1}(r - e)$ that were defined in Remark 1.2. Note that the net payoff of voting for q for PB i in the event that the incumbent survives the challenge is given by $v(\theta_i) - r - e$. Since the net payoff of voting for q for PB i is always at least $v(\theta_i) - r - e$, then $\theta_i > \overline{\theta_i} \Rightarrow \Pi(\theta_i; \chi) > 0$ for any χ. Similarly, since the net payoff of voting for x for PB i is always at least $r - e - v(\theta_i)$ (where the challenge is successful for sure), then $\theta_i < \underline{\theta_i} \Rightarrow \Pi(\theta_i; \chi) < 0$ for any χ. It should be noted that the points $\overline{\theta_i}$ and $\underline{\theta_i}$ are well defined, since $v(\cdot)$ is continuously decreasing, and $\lim_{\theta_i \to -\infty} v(\theta_i) = \infty$, while $\lim_{\theta_i \to \infty} v(\theta_i) = -\infty$ by A1. Now, $\pi(\delta) \equiv \Pi(\delta, \delta) \equiv \Pi(\theta_i = \delta, \chi = 1_{\{\theta_i \geq \delta\}})$. Then the previous argument implies, in particular, that $\pi(\delta) > 0$ for $\delta > \overline{\theta_i}$ and $\pi(\delta) < 0$ for $\delta < \underline{\theta_i}$. Since $\pi(\delta)$ is continuous, this implies that $\{\delta : \pi(\delta) = 0\} \neq \emptyset$. Next, let

$\delta_p \in \{\delta : \pi(\delta) = 0\}$. To show the existence of the symmetric equilibrium, it is now enough to show that $\Pi(\theta_i; 1_{\{\theta_i \geq \delta\}})$ is increasing in θ_i. But it is easy to see from (1) that $P(\delta, \theta_i)$ is increasing in θ_i. Since $v(\theta_i)$ is decreasing, the result follows.

Q.E.D.

Lemma 1.2. *Suppose that $\pi(\delta)$ is strictly increasing. Then $\{\delta : \pi(\delta) = 0\}$ has a single element δ_p, and the equilibrium of Lemma 1.1 is unique.*

Proof (Morris and Shin 1998). If $\pi(\delta)$ is strictly increasing, there is a unique δ_p solving $\pi(\delta) = 0$. We show next that this in turn implies that the symmetric equilibrium with switching strategies at δ_p is the unique equilibrium. So consider any equilibrium of the game, and define

$$\underline{z} \equiv \inf\{z | \chi(z) > 0\} \text{ and } \bar{z} \equiv \sup\{z | \chi(z) < 1\}$$

Note first that:

$$\bar{z} \geq \sup\{z | 0 < \chi(z) < 1\} \geq \inf\{z | 0 < \chi(z) < 1\} \geq \underline{z} \tag{1.12}$$

Now, for any $z \in \{z | \chi(z) > 0\}$, there is some i for which $\xi_i^P(z; r) = x$. This is only consistent with equilibrium behavior if the payoff to supporting x (for individual i and for anyone else, since they are all identical, ex ante) is at least as high as the payoff to supporting q given ideal policy z; i.e., $\Pi(z; \chi) \geq 0$. By continuity, this is also true at $\underline{z}$; i.e.,

$$\Pi(\underline{z};\chi) \geq 0 \tag{1.13}$$

Now consider the payoff $\Pi(\underline{z};1_{\{\theta_i \geq \underline{z}\}})$. It is clear that, for any z, $1_{\{\theta_i \geq \underline{z}\}}(z) \geq \chi(z)$. But - in general - whenever $\chi(z) \geq \chi'(z)$ for any z, then $\Pi(z;\chi) \geq \Pi(z;\chi')$. Hence $\Pi(\underline{z};1_{\{\theta_i \geq \underline{z}\}}) \geq \Pi(\underline{z};\chi)$ for any z, and in particular

$$\pi(\underline{z}) \equiv \Pi(\underline{z};1_{\{\theta_i \geq \underline{z}\}}) \geq \Pi(\underline{z};\chi) \tag{1.14}$$

Thus combining (1.13) and (1.14) we obtain $\pi(\underline{z}) \geq 0$. Now by hypothesis, $\pi(\delta)$ is increasing in δ. Since δ_p is the unique value of δ which solves $\pi(\delta) = 0$, this means $\underline{z} \geq \delta_p$. A symmetric argument establishes that $\bar{z} \leq \delta_p$. Thus $\bar{z} \leq \delta_p \leq \underline{z}$. This, together with (1.12) implies that $\bar{z} = \delta_p = \underline{z}$. Thus in any equilibrium the aggregate support mapping χ, and thus the strategy of every PB, ξ_i^P, is given by $1_{\{\theta_i \geq \delta_p\}}$.

Q.E.D.

Lemma 1.3. *$p(\cdot)$ is a decreasing function of δ. Furthermore, for any Q>0, there exists a $\bar{\eta}(Q)$ such that if $\eta > \bar{\eta}(Q)$, then $|p'(\delta)| < Q$.*

Proof. Since

$$\left(\frac{\theta - \hat{\theta}(\theta_i = \delta)}{\hat{\eta}}\right)_{\theta=\delta-\sigma\Phi^{-1}(1-\mu)} = \frac{1}{\hat{\eta}}\left[\frac{\sigma^2}{\sigma^2+\eta^2}(\delta-\theta_0) - \sigma\Phi^{-1}(1-\mu)\right]$$

, then

$$p(\delta) = P(\delta,\delta) = 1 - 2\Phi\left(\frac{1}{\hat{\eta}}\left[\frac{\sigma^2}{\sigma^2+\eta^2}(\delta-\theta_0) - \sigma\Phi^{-1}(1-\mu)\right]\right)$$

Hence

$$\frac{\partial p(\delta)}{\partial \delta} = -2\phi\left(\frac{1}{\hat{\eta}}\left[\frac{\sigma^2}{\sigma^2+\eta^2}(\delta-\theta_0) - \sigma\Phi^{-1}(1-\mu)\right]\right)\frac{1}{\eta}\frac{1}{\sqrt{1+\frac{\eta^2}{\sigma^2}}}$$

That $p'(\delta) < 0$ follows immediately. And since $|p'(\delta)|$ is bounded above by $\frac{2}{\eta}$, $|p'(\delta)| < Q$ for $\eta > 2/Q = \bar{\eta}(Q)$.

Q.E.D.

Lemma 1.4. $\lim_{\sigma\to 0} d = v^{-1}(r) - v^{-1}(r + e[1-2\mu])$

Proof. Let

$$f(\sigma) \equiv \Phi\left(\left(\frac{\theta - \hat{\theta}(\theta_i = \delta)}{\hat{\eta}}\right)_{\theta=\delta-\sigma\Phi^{-1}(1-\mu)}\right)$$

$$= \Phi\left(\frac{1}{\eta}\frac{1}{\sqrt{1+\frac{\eta^2}{\sigma^2}}}(\delta_p(\sigma)-\theta_0) - \sqrt{1+\frac{\sigma^2}{\eta^2}}\Phi^{-1}(1-\mu)\right)$$

Since $f(\sigma)$ is continuous in an interval around 0,

$$\lim_{\sigma\to 0} f(\sigma) = \Phi\left(\lim_{\sigma\to 0}\left[\frac{1}{\eta}\frac{1}{\sqrt{1+\frac{\eta^2}{\sigma^2}}}(\delta_p(\sigma)-\theta_0) - \sqrt{1+\frac{\sigma^2}{\eta^2}}\Phi^{-1}(1-\mu)\right]\right)$$

Note that $\underset{\sigma\to 0}{Lim}\sqrt{1+\frac{\sigma^2}{\eta^2}}=1$, and $\underset{\sigma\to 0}{Lim}\,\eta^{-1}\left(1+\frac{\eta^2}{\sigma^2}\right)^{-\frac{1}{2}}=0$. Since $\delta_p(\sigma)$ is bounded (by $\underline{\theta_i}$ and $\overline{\theta_i}$), this implies that

$$\underset{\sigma\to 0}{Lim}\, f(\sigma)=\Phi\left(-\Phi^{-1}(1-\mu)\right)=\Phi\left(\Phi^{-1}(\mu)\right)=\mu$$

Now,

$$v(\delta_p)\equiv r+e\left[1-2\Phi\left(\left(\frac{\theta-\hat{\theta}(\theta_i=\delta)}{\hat{\eta}}\right)_{\theta=\delta-\sigma\Phi^{-1}(1-\mu)}\right)\right]$$

Therefore in the limit, as $\sigma\to 0$, $v(\tilde{\delta}_p)=r+e[1-2\mu]$, so that

$$\underset{\sigma\to 0}{Lim}\, d = v^{-1}(r) - v^{-1}(r + e[1 - 2\mu])$$

Q.E.D.

Remark 1.5. *(i) Suppose that for all i in a given set Ω_0, $c_i(\theta_i,x)=0$ if $\Omega=\{i\}$. Then in an equilibrium with no weakly dominated strategies, $c(x)=0$ for $\Omega=\Omega_0$; (ii) Suppose that for a given set Ω_0 there exists $i\in\Omega_0$ such that $c_i(\theta_i,x)=1$ for $\Omega=\{i\}$. Then in an equilibrium with no weakly dominated strategies $c(x)=1$ for $\Omega=\Omega_0$*

Lemma 1.5. *There exists a $\bar{\eta}$ such that for all x>q, whenever $\eta>\bar{\eta}: c(x)=1\Rightarrow\eta>\bar{\eta}(x)$.*

Proof. (1) Let $p_{ov}(\theta_i)$ denote the probability that a PB with ideal point θ_i assigns to the incumbent being overthrown in the event of a challenge. Then $i \in \Omega$ would challenge the incumbent if and only if:

$$p_{ov}(\theta_i)e + u(q;\theta_i) \geq \max\{u(x;\theta_i) + (e+r); u(q;\theta_i)\}$$

That is, iff

$$p_{ov}(\theta_i) \geq \max\left\{\frac{e+r-v_x(\theta_i)}{e}; 0\right\} \tag{15}$$

(2) It is easy to see from here that if $p_{ov}(\theta_i) = 1$ for some i (if i believes that if the incumbent is challenged, she will be overthrown), then i would challenge iff $\theta_i \geq v_x^{-1}(r)$.[22] It follows from this that for any belief about the resolution of a challenge $p_{ov}(\theta_i)$ the incumbent will not be challenged provided that $\underline{\omega} = \min\{\theta_i : i \in \Omega\} \geq v_x^{-1}(r)$.

(3) A sufficient condition for a unique voting equilibrium following a challenge is that $e\,|\,p'(\delta)\,| < |\,v'(\delta)\,|$ for every δ. Since for every δ *(i)* $|\,p'(\delta)\,| < \frac{2}{\eta}$ and *(ii)* $|\,v'(\delta)\,| > \underline{\alpha}(x-q)$ (by A1'), this occurs if

$$\tfrac{2}{\eta}e < \underline{\alpha}(x-q)$$

Then there will always be a unique equilibrium if

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[22] To see this, note that $e+r-v_x(\theta_i) < 0$ if $\theta_i < v_x^{-1}(e+r) \equiv \underline{\theta}_i$, while $e+r-v_x(\theta_i) > 0$, and increases continuously with θ_i for $\theta_i > \underline{\theta}_i$. Letting $\overline{\overline{\theta}}_c$ denote the value of θ_i that solves $1 = \max\left\{\frac{e+r-v_x(\theta_i)}{e}; 0\right\}$, it follows that *(i)* a PB would challenge iff $\theta_i < \overline{\overline{\theta}}_c$, and that *(ii)* $\overline{\overline{\theta}}_c > \overline{\theta}_i$, so that $e+r-v_x(\overline{\overline{\theta}}_c) > 0$ and then $\overline{\overline{\theta}}_c = v_x^{-1}(r)$..

$$(x-q) < \tfrac{2e}{\eta \underline{\alpha}} \Rightarrow \underline{\omega} > v_x^{-1}(r) \qquad (1.16)$$

Note, moreover, that A1' implies that $v_x^{-1}(r) < \delta_0 - \frac{r}{\bar{\alpha}(x-q)}$. Hence (1.16) becomes:

$$(x-q) < \tfrac{2e}{\eta \underline{\alpha}} \Rightarrow \underline{\omega} > \delta_0 - \tfrac{r}{\bar{\alpha}(x-q)}$$

Writing $\delta_0 = q + \frac{(x-q)}{2}$, this will always be satisfied provided that:

$$q + \tfrac{e}{\eta \underline{\alpha}} - \tfrac{1}{2}\tfrac{\alpha}{\bar{\alpha}}\tfrac{r}{e}\eta < \underline{\omega}$$

Since the LHS is decreasing in η and diverges to $-\infty$ as $\eta \to \infty$, for any given $\underline{\omega}$ there is an $\bar{\eta}$ such that whenever $\eta > \bar{\eta}$ this inequality is satisfied.

Q.E.D.

Lemma 1.6. *For $\eta > \bar{\eta}$ there exists a $\tilde{x}_\eta \in \Re$ such that $c(x) = 1 \Leftrightarrow x \geq \tilde{x}_\eta$*

Proof. Fix $\eta > \bar{\eta}$. By Lemma 1.5, $c(x) = 1 \Rightarrow \eta > \bar{\eta}(x)$. Then for a potential challenger with ideal point θ_i, the probability that an active incumbent is overthrown is given by

$$\Pr(\theta < \delta - \sigma\Phi^{-1}(1-\mu) \mid \theta_i) = \Phi\left(\left(\frac{\theta - \hat{\theta}(\theta_i = \delta)}{\hat{\eta}} \right)_{\theta = \delta - \sigma\Phi^{-1}(1-\mu)} \right)$$

Note that $\Pr(\theta < \delta - \sigma\Phi^{-1}(1-\mu) \mid \theta_i)$ is a continuous, decreasing function of θ_i, and that $\underset{\theta_i \to -\infty}{Lim} \Pr(\theta < \delta - \sigma\Phi^{-1}(1-\mu) \mid \theta_i) = 1$, while

$\underset{\theta_i \to \infty}{Lim} \Pr(\theta < \delta - \sigma\Phi^{-1}(1-\mu) \mid \theta_i) = 0$. Then $c_i(\theta_i; x) = 1 \Leftrightarrow \theta_i < \theta_c$, where $\theta_c > \underline{\theta_i}$ is uniquely defined by:

$$r + eP(\delta_p, \theta_c) \equiv v_x(\theta_c) \tag{1.17}$$

Note that θ_c so determined is an increasing function of x, $\theta_c(x)$. This result can be obtained totally differentiating (1.17) noting that *(i)* since the LHS is bounded between r and $r+e$, $v_x(\theta_c) > 0$ (every challenger prefers q to x), *(ii)* whenever $v_x(\theta_i) > 0$, $v_{x'}(\theta_i) > v_x(\theta_i)$ for $x'>x$ (for individuals who prefer q to x, increasing x increases the payoff of voting for q), *(iii)* δ_p is increasing in x, and therefore $P(\delta_p, \theta_c)$ is decreasing in x (since the probability of a successful challenge increases with x). Also *(iv)* $P(\delta_p, \theta_c)$ is increasing in θ_i and *(v)* $v_x(\theta_i)$ is decreasing in θ_i.

For a given x, there will be a challenge if and only if $\theta_c(x) \geq \underline{\omega}$. We know by the previous lemma that if $x < q + \frac{2e}{\eta\underline{\alpha}}$ then *c(x)=0*. Thus $\theta_c(x) < \underline{\omega}$ for $x < q + \frac{2e}{\eta\underline{\alpha}}$. Since $\theta_c(\cdot)$ is an increasing function of x, $c(x) = 1 \Leftrightarrow x \geq \tilde{x}$, where x is defined by $\theta_c(x) \equiv \underline{\omega}$; i.e., by $r + eP(\delta_p(\tilde{x}), \underline{\omega}) \equiv v_x(\underline{\omega})$.

Q.E.D.

1.9 Appendix B

The discussion of Proposition 1.3 in the text emphasizes the change in the weight that PBs give to their preferences *vis a vis* public information as a result of changes in the heterogeneity of the party. This note explains in some detail why this weight effect, while not reflecting the entire story, is dominant in producing the result.

As before, let δ denote an arbitrary cutoff for PBs' strategies. Letting $\beta(\sigma) \equiv \hat{\eta}^{-1}$ and $k(\sigma) \equiv \frac{\sigma^2}{\sigma^2+\eta^2}$, we write

$$\left(\frac{\delta - \hat{\theta}(\theta_i)}{\hat{\eta}}\right) = \beta(\sigma)[k(\sigma)(\delta - \theta_0) + (1 - k(\sigma))(\delta - \theta_i)]$$

The derivative of this expression with respect to σ is:

$$\beta'(\sigma)[k(\sigma)(\delta - \theta_0) + (1 - k(\sigma))(\delta - \theta_i)] + \beta(\sigma)k'(\sigma)(\theta_i - \theta_0) \qquad (1.18)$$

Note that the value that individual θ_i attaches to the incumbent's promises of electoral benefits, $P(\delta, \theta_i)$, has an inverse relationship with the probability that this individual attaches to the incumbent being overthrown, and that this probability increases (decreases) with σ if (1.18) is positive (negative). Using this expression, we can separate the total effect of increasing σ on the probability that individual θ_i attaches to the incumbent being overthrown into two components.

First, there is a change in the precision of his estimation of the central tendency of the party. Given that $\mu = 1/2$, the incumbent is overthrown if

the ex post median is not in the incumbent's coalition; i.e., if $\theta < \delta$. If δ is big relative to the weighted average $k(\sigma)\theta_0 + (1-k(\sigma))\theta_i$ (with the weigths $k(\sigma)$ fixed), then this is a relatively "common" event. But a lower precision makes "common" events less likely (in opposition to "extreme" events). Thus, whenever $\delta > k(\sigma)\theta_0 + (1-k(\sigma))\theta_i$, or equivalently $k(\sigma)(\delta - \theta_0) + (1-k(\sigma))(\delta - \theta_i) > 0$, this precision effect induces individual i to consider less likely that the incumbent will be overthrown.

Second, there is a change in the weight that i gives to his own preferences *vis a vis* the public information in his estimation of the central tendency of the party. As noted in the text, a higher σ means that individual i will attach more weight to the public information and less to his own preferences in estimating the central tendency of the party. $\phi(\cdot)\beta(\sigma)k'(\sigma)(\theta_i - \theta_0)$ reflects the change in the probability that individual θ_i attaches to the incumbent being overthrown brought by the change in weights between public and private information. Thus a higher σ will make individuals with ideal policies $\theta_i > \theta_0$ believe that the central tendency of the party is farther away from the policy supported by the incumbent (more to the left). Thus, such an individual will attach a higher probability to the incumbent being overthrown.

Note that for individual i, with ideal policy θ_i, the "precision" term is clearly decreasing in δ, while the "weight" term is independent of δ.

However, for the critical PB, with ideal policy δ, a higher δ implies both a change in the cutoff and a change in his information, and both the precision and weight terms depend on the difference between δ and θ_0. For the critical PB, (1.18) becomes:

$$\beta'(\sigma)k(\sigma)(\delta-\theta_0)+\beta(\sigma)k'(\sigma)(\delta-\theta_0) \tag{1.19}$$

The precision term is, as before, decreasing in δ. Even if the estimate of the central tendency of the party changes with the preferences of the individuals we consider (a more "right-winged" PB believes "the party" is more "right-winged"), this only happens with the weight given to their preferences *vis a vis* the public information, and thus is not strong enough to compensate the increase in the cutoff. Furthermore, the precision term is positive if $\delta<\theta_0$ and negative otherwise. However, for the critical PB the weight term is now increasing in δ, and positive if $\delta>\theta_0$.[23]

Thus, both the precision and weight terms depend on the difference $\delta-\theta_0$, and (1.19) is positive when $\delta>\theta_0 \Leftrightarrow \beta'(\sigma)k(\sigma)+\beta(\sigma)k'(\sigma)>0$, or equivalently, iff

$$\frac{k'(\sigma)}{k(\sigma)}>\frac{|\beta'(\sigma)|}{\beta(\sigma)} \tag{1.20}$$

[23] This means that according to the precision effect, a less cohesive party would led a "left-winged" critical PB to consider more likely that the incumbent will be overthrown (and thus the value that he would attach to the incumbent's promises would decrease). According to the weight term, however, a less cohesive party would led a "left-winged" critical PB to consider less likely (and not more likely as above) that the incumbent will be overthrown (thus reducing the value of her promises).

; i.e., iff the rate of growth of the "weight" term outweighs the rate of growth of the "precision" term. Some algebra shows that (20) is indeed satisfied, and therefore that the weight terms dominates for the critical PB. Therefore (1.19) is positive iff $\delta > \theta_0$, the probability that individual δ attaches to the incumbent being overthrown increases with σ iff $\delta > \theta_0$, and then $p(\delta) \equiv P(\delta, \delta)$ decreases with homogeneity iff $\delta > \theta_0$.

Chapter 2

Judicial Independence in Unstable Environments, Argentina 1935–1998

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Argentina's constitution and electoral rules promote a fragmented polity. It is in those environments that independent judiciaries develop. Instead, most analysts do not consider the Argentina judiciary as independent. In this article we attempt to explain this contradiction by showing that this perception is inappropriate. We develop a test of the hypothesis that the judiciary is independent by empirically examining the political incentives faced by individual justices in their decision making. Our results show an often-defiant Court subject to constraints. Our measure of defiance is the probability of a non-aligned justice voting against the government. We find that judicial decision making was strategic. The probability of voting against the government falls the stronger the control of the president over the legislature, but increases the less aligned the justice is with the President. Thus, politics *and* process matter in understanding Argentine's Supreme Court decisions. Institutions matter in Argentina as well.

The US Supreme Court's impact on policymaking is undisputed.[1] Such power, however, is less evident as we move towards other latitudes. In a recent series of papers, it has been shown that the power of the judiciary is limited in parliamentary systems like those in Japan or Europe,[2] where cabinet's control over the legislature limits the ability of the court to innovate.[3] The central idea is that in environments where political fragmentation is the norm, the Judiciary is able, over time, to create a doctrine of judicial independence without fear of political reprisals. Similar attempts in a more unified political environment would generate political clashes, eventually limiting the Judiciary's power.[4] The evolution of the doctrine of judicial review in the United States seems to fit into this theory.[5]

Judicial independence, though, is an elusive concept. We refer to judicial independence as the extent to which Justices can reflect their preferences in their decisions without facing retaliation measures by Congress or the President. From this it follows rather directly that judicial independence cannot be measured simply by considering judicial reversals of governmental acts. The probability of observing a Justice voting to reverse a governmental act is related to whether the Justice *can* challenge the President, but also whether the Justice *wants* to challenge the President. That is, it depends not only on the political constraints faced by the court (i.e., how fragmented are its policy competitors) and the possible political repercussions (i.e., legislative

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[1]See Marks (1989), Gely and Spiller (1990), Gely and Spiller (1992), Epstein and Walker (1994), Epstein and Knight (1997), Schubert (1965), Segal and Cover (1989), Segal and Spaeth (1993), and Segal (1997).

[2]See Ramseyer and Rasmusen (1997), and Salzberg (forthcoming).

[3]See Spiller (1996a) and Spiller (1996b). See also, Cooter and Ginsburg (1996).

[4]See Gely and Spiller (1992), and Epstein and Knight (2000). Spiller (1996a) calls this movement the Pavlovian evolution of the doctrine of judicial independence.

[5]See Spiller and Gely (1992), Epstein and Knight (2000), but see also Segal (1997) and references therein.

reversal of the Court's decision, expansion of the court, impeachment of a justice), but also on the Justice's political alignment. Political alignment, in turn, depends on both the nomination process, which to some extent will map into preferences, and turnover in the Court. Courts whose tenure are very short will naturally tend to be aligned with the appointing powers, limiting the potential for conflict between the Court and the other political institutions. Courts whose tenure is indefinite or very long, may alternate between political alignment and political opposition to the sitting government. Indeed, in the limit, Justices with policy preferences identical to those of the Executive would face no political constraints, and their behavior would be, as a consequence, unaffected by the degree of political fragmentation.[6]

In this article we explore judicial decision making in Argentina, a Presidential system characterized by a relatively high degree of power fragmentation[7] and, since the 30's, extreme political instability. While the former would imply a relatively independent judiciary according to the division of power theory, the latter fosters political manipulation of the court. Indeed, both civilian and military Presidents were able to govern with relatively sympathetic Supreme Courts. Hence, conflicting with the implications of political fragmentation, the nature of judicial appointments would suggest that Argentinean Supreme Court justices must have treated successive federal governments with velvet gloves. This is in fact the common wisdom, reflected both in public opinion polls,[8] and in most analysts' writings (see below). Nevertheless, the lonely voices of those who question the validity of the alleged lack of independence[9] had recently found support in the results of two studies, which, focusing on a recent period, show that the Argentine Government loses cases in a proportion similar to that of the U.S.[10] Hence, it is not obvious that the appointment powers are so important as to void the implications of the division of power theory. That is, that an "aligned" court will be indulgent with the President and unresponsive to changes in the political environment.

The purpose of this article is to develop a test of the independence hypothesis by empirically examining the political incentives faced by individual justices in their decision making. Our results show a complex story. They show often-defiant Justices subject to constraints. Our measure of defiance is the probability of a justice not aligned with the government voting against the government. We find that in the middle of so much chaos and political upheaval, the Argentine Court has not been a simple "rubber stamp." The probability of voting against the government depends on the political alignment of the Justice, but the appointment power is bounded and does not, by itself, lead to complete political control of Courts. As Molinelli (1999) and Helmke (1998, 1999) have shown for the later period of our sample, the Court has over time reversed the government in a surprisingly large number of reasonably important cases, and the Court has reversed more often decisions by *de facto* governments than those taken by civilian governments. We also find support for the division of power theory of courts; judicial decision making was also strategic. The probability of voting against the government falls the stronger the control of the president over the legislature, and in particular, with his or her ability to increase Court size or successfully start impeachment procedures against justices. Thus, politics matter in understanding Argentine's Supreme Court decisions. It is not just raw power. Institutions matter in Argentina as well.

A Simple Model Of Judicial Decision Making Under Constraints

In this section we develop a simple but useful model which we empirically implement later in the article. The simplicity of the model is driven by the unavailability of roll calls in the Argentinean Congress which makes it almost impossible to attempt to develop independent measures of legislators' preferences, and hence of justices' ideology (see Bergara, Richman, and Spiller 1999). Thus, we do not present a spatial model based on the standard liberal/conservative dimension as that is not implement-

[6]See Spiller (1996a). This, however, will not be the case when the Executive loses its ability to veto legislation as would be the case if the opposition has a strong hold on the legislature.

[7]For a brief description of Argentina's constitution and electoral laws, see Spiller and Tommasi (2000).

[8]See La Nación, Colección Especial (1999).

[9]Among them, Molinelli (1999) is perhaps the most outspoken. He has argued that there are several indications that since the 1930 coup, the Court has increased its autonomy. Since then, the Court started to name its President, Justices started to come from within; in the 1950s the Court introduced injunctions, which only thereafter were introduced by law; the same happened with the concept of arbitrariness; since the 1950 the Court started to reduce the discretion of the Presidents during *de facto* regimes; during the 1960s and 1970s the Court increased the ability of litigants to sue the State; it reduced the scope of the "political issues" doctrine; and so on and so forth. While several of these issues are contrasted by opposing arguments, this surely indicates that a more systematic approach to the study of Court's decisions is needed.

[10]See Helmke (1999) and Molinelli (1999).

able for Argentina. We discuss below various dimensions in which the model could be extended.

Our model is composed of three building blocks: players, preferences, and sequence. There are three basic players: Justices, the President, and Congress. Concerning Justices' preferences, we assume that Justices are both strategic and politically motivated (Gely and Spiller 1990). Thus they look ahead to the sequence of the game and make their individual choices strategically so as to maximize their policy benefit from the decision. The President and members of Congress also have policy-oriented preferences. Their policy objectives, however, may not be similar. The President may or not have full control over the Congress. Sequence is as follows: (a) nature draws a particular piece of legislation; (b) the Court reviews its constitutionality and may uphold it or declare it unconstitutional. If it upholds it, the game ends. If the Court declares it unconstitutional, (c) the President may punish the Court, either by expanding the court or replacing Justices via impeachment. For the President to be able to punish, it needs strong support in Congress. If the President punishes the Court, it can implement the piece of legislation the Court reversed. [11]

We solve the model backwards, and look at the decision of a justice on how to vote. Assume the Justice to be pivotal, so that, say, in a three member court, two justices have voted to uphold and one has voted to reverse. Assume that the Justice preferences are similar to that of the President. Thus, the decision is simple: uphold. Assume, now that his or her preferences are opposed to those of the President. When the President has strong control over Congress, if the Justice votes to reverse, the Justice knows that the President can indeed punish the Court, and thus implement the contested norm. Thus, the Justices' dominant strategy is to uphold the contested norm. Now, if the President does not have strong control over Congress, then the dominant strategy for such Justice is to vote against the constitutionality of the norm as the Court's reversal will go unpunished.[12]

[11]The model could be extended in the various directions. Two are worth mentioning: First, the President could pay a cost would it punish the Court (such cost could take the form of a loss in legitimacy or public support). Since this type of costs may potential punishments as credible strategies, cases may have to differ in terms of a dimension that affects the utility of the President, say saliency. Thus, a possible equilibrium could be that the Court can freely reverse low-saliency cases, but would it reverse high-saliency issues, a punishment would be forthcoming (for a model of this sort, see Schwartz, Spiller, and Urbiztondo 1994). come out of Congress could be endogenized. This work is, however, left for future research.

[12]Observe that if the Justice is not pivotal, his/her vote has no direct policy implication. Thus the Justice will be indifferent between upholding and reversing.

Thus, our model has strong empirical implications: all else constant, the probability of a pivotal justice voting for upholding the constitutionality of a challenged norm increases with a) the strength of Presidential control over Congress, and b) the political alignment of the justice with the President. We test this model in Section 4.

Background On Argentina's Judiciary

The Beginnings

Argentina embraced the US system of constitutional control, in which Justices have the authority to challenge norms emanating from the political powers, having the protection of formal independence. As in the US, the courts' power to review the constitutionality of norms enacted by Congress and the Executive was not granted explicitly in the Constitution, but instead rose through Supreme Court's decisions. As in the US, the Argentine Supreme Court interpreted the Constitution to grant itself such authority,[13] and has continuously established doctrines defining the boundaries of this authority.[14] Hence, while the Court asserted its power of judicial review, it did so, as in the US, with restraint (Nino 1992). In Argentina, though, self-restraint emerged in the midst of political instability and military interruptions of the democratic order.

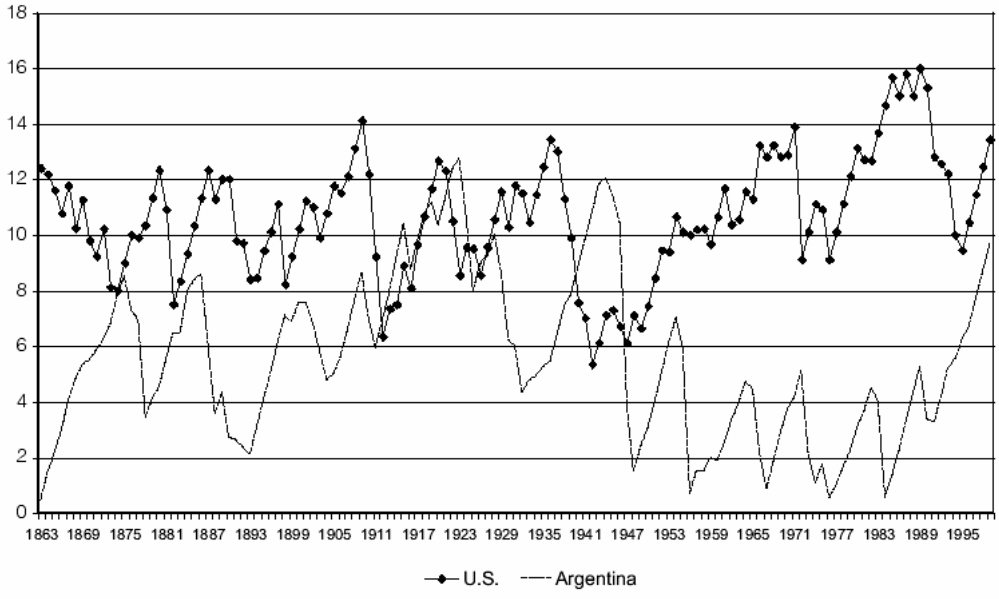
A Bumpy Road

While Argentina's constitutional structure is similar to that of the U.S., its political history is extremely different. Since the first *coup d'etat* in 1930, Argentina suffered six interruptions of democratic governments. This instability had direct effects on the rotation of incumbent politicians, leading to extremely low tenure of Presidents (2.6 years), national legislators (2.9 years) and provincial governors (1.9 years). The Supreme Court did not escape from the general instability. Although Supreme Court Justices are appointed for life, since 1930, their average

[13]See Articles 31 and 116 of the Constitution. See also Ziulu (1998).

[14]As in the "*Marbury v. Madison*" decision, in the 1887 "*Sojo*" decision, the Argentine Supreme Court declared the power of courts to carry out the constitutional control over Federal legislation (See CSJN, Fallos, 32:120). The following year, in "*Municipalidad de la Capital c/Elortondo*," the Court expressly declared the unconstitutionality of a Congressional law (See CSJN, Fallos, 33:162.). It had already considered the constitutionality of a presidential decree. See, for example, the Court declaring, in its 1863 "*Ríos*" decision, the unconstitutionality of a presidential decree (CSJN, Fallos, 1:36).

FIGURE 1 Supreme Court Justices Tenure in Argentina and the U.S., 1863–1999



tenure has reached only 4.6 years. This tenure is low compared to most other countries (see Henisz 2000). As Figure 1 shows, in spite of the US and Argentina having similar institutional beginnings, the instability reduced Argentine Justices' tenure dramatically, and only recently, after three consecutive democratic periods—and in spite of President Menem's enlargement of the Court in 1990—the Court's average tenure is converging to its "normal" value.

These figures suggest that since the impeachment of four of the five sitting Justices during the first Perón administration, the norm of judicial independence was lost.[15] The change in the norm can best be seen in figures. While until Perón's presidency, 82 percent of Supreme Court Justices left the Court because of (natural) death or retirement, since then only 9 percent of the Justices did so, while the other 91 percent left it either because of resignation, impeachment, or irregular removal (Molinelli, Palanza, and Sin 1999).

To these striking numbers, the effect of Court enlargements should also be added, which at the very least have the potential to attain the same results as Justices' removal, changing the Court's median voter position, and potentially, the Court's final decisions. These changes in the Court composition—whether by removal or Court enlargement—constitute our first direct concern. In an environment of alternating governments, the justices' appointment and dismissal procedure that arises from the Argentine's Constitution should naturally generate a balanced composition of Court's members, with policy preferences being relatively independent from those of the sitting Executive. Gradual replacement of departing Justices by governments of different parties would rarely allow abrupt changes in the median justice preference. Furthermore, a balanced policy preference of the median justice would, in a divided government scenario, lessen the nomination power of the President.

Instead, the large maneuvering room enjoyed by each appointing President to name some or all Court members, and the corresponding extremely short tenure of Argentinean justices, breaks this natural balance. The result is that, since the first Perón administration, only occasionally had a sitting President faced a Court whose majority of members was appointed by Presidents of opposite political tendencies.[16]

[15] For discussions on the break in the independence norm, see Molinelli (1999) and Helmke (1999).

[16] This politicized appointment process and its implication for the lack of judicial independence is argued by analysts to be behind the low level of public perception in Argentina. See Nino (1992), Ekmekdjian, (1999) Morello (1996), and Masnatta (1997).

But irregular removals and appointments, the strategic alteration of the Court's size, and forced resignations, are not the whole story. A second component is that judicial behavior will tend to be more lenient towards the executive—independently of the court's political alignment—whenever the executive has the ability to punish the court, whether by impeachment or altering its size.

In this framework, a unified government clearly signals a higher presidential political strength and consequently induces a larger adaptation of Court's decisions. Specifically, the closer the President's support in Congress is to the majorities required for either Court enlargement or impeachment (simple majority in either house or supermajorities in both houses, respectively), the more we expect to see a constrained Court. We test this theory next.

Rubber Stamp OR Strategic Self-Restraint: An Empirical Investigation

Introduction

The strong conclusions of qualified analysts do not seem to leave much room for further arguments: Argentina's Supreme Court did not constitute, throughout the twentieth century, a reliable check to the political powers. Still, a quantitative, systematic, assessment of the issue is lacking. Only two authors, Helmke (1998, 1999) and Molinelli (1999), have provided the initial steps in this direction.

Focusing on the reversal ratio in "important" Court decisions about the constitutionality of norms between 1983 and 1997, Molinelli (1999) finds that Argentina's Supreme Court found unconstitutional 26 percent of the 195 challenged national norms. Using a different sampling procedure,[17] and focusing on the period 1976–95, Helmke (1998) finds slightly higher levels of reversals. She finds that under both the military government of 1976–1983 and the Alfonsín presidency (1983–1989), the average percentage of cases decided against the government was 41 percent, while under the first Menem administration (1989–1995) the average percentage of cases decided against the government was 30 percent. Although this reversal ratio is not too distinct from the US experience, it may be due to multiple underlying factors. This fact is partially addressed in Helmke's treatment, which studies the effect upon justices' decisions of the "expected" change in the political orientation of the government.[18] In this article we attempt to perform a fuller test of the strategic approach to Supreme Court's constitutional control, using data from 1935 to1998, which enables us to reflect the changing political environment more systematically.

Data and Models

Argentina's Supreme Court decides several thousands of cases a year.[19] Besides the fact that many of these cases are the exact repetition of one another, although with different plaintiffs, their political significance is extremely diverse. Thus, the first issue to address is the scope of the sample. Both Helmke (1999) and Molinelli (1999) limit the pool of cases considered. Molinelli (1999) considers only the cases published *in extenso* in La Ley, the main judicial publication in Argentina. Helmke (1999) does not limit the sample to these cases, but introduces a dummy variable indicating whether they were fully published or not. Here we follow Molinelli (1999). Utilizing Molinelli's (1999) methodology, and under his supervision, we commissioned the extension of Molinelli's sample to include cases originating in 1935.[20] Thus, our data set encompasses cases from 1935 to 1997 and includes the original Molinelli's data set, as well as the Bercholc extension.

Following Molinelli (1999), to distinguish between important and unimportant cases, our data-set includes only those cases which fulfill three conditions: (1) the case involves the constitutionality of government norms,[21] (2)

[17]Helmke (1998) uses a variety of cases in which either the government was a litigant or an executive decree handed down by the sitting government was named in a case.

[18]Helmke (1998) uses "analytic narrative" to construct these expectations for President Alfonsín's democratic sucesion of the military regime in 1983, President Menem's election in 1989, and his reelection in 1995.

[19]Since 1991, the Court has been handling between 5000 and 8000 annually. See Molinelli (1999). Differing from its U.S. counterpart, the Argentine Supreme Court does not have the ability to issue *certiorari* decisions, nor does the *stare decisis* doctrine formally exist. As a consequence, the Argentine Supreme Court sees a very large number of cases per year (Bidart Campos 1982). But the thousands of cases mask the fact that many are repetitive cases. Since until very recently the court did not have the ability to determine a law as unconstitutional *per se*, but rather had to deal with the unconstitutionality of its application to a particular case (person), the Court has ruled multiple cases but essentially implemented a single decision multiple times.

[20]We are thankful to the CEDI for having funded this extension and to Prof. Jorge Bercholc from the Law School of the Universidad de Buenos Aires for having undertaken it.

[21]By norms, we mean laws, Presidential decrees, administrative decisions and resolutions. Cases in which the constitutionality of a

the Court actually decided for or against the constitutionality of the challenged norm,[22] and (3) the case was published *in extenso* in «La Ley.»[23] This leaves us with 1646 cases, 1052 of which consider national norms.

Our purpose is to determine the behavioral factors that contribute to the probability of a Supreme Court Justice voting for or against the constitutionality of national norms. We model that decision using a logit model, where the dependent variable is a Justice's decision for or against the constitutionality of the challenged norm. The independent variables are indicators of the President's political strength, Justices' preferences, and some case specific variables, including the Solicitor General's opinion, described below.

We test strategic behavior in two ways. In the first approach, we look at the Court as a whole. Assuming that the Median Voter Theorem holds, we use the Court's final decision as the dependent variable and the imputed preference of the median Justice as an explanatory variable. This approach raises the problem of multidimensionality inherent to the voting environment.[24] Thus, our second approach is to explore in detail Justices' individual decisions rather than the Court as a whole. In the first model, the dependent variable, CONSTITUTIONAL, takes the value 1 when the Court considers a law, decree or resolution to be constitutional, and 0 when it considers it to be unconstitutional.[25] In the second model, the dependent variable, CONSTITUTIONAL_j, is built in the exact same way as CONSTITUTIONAL but for each case it is applied to each individual judge j.

We now turn to describe the independent variables, which are intended to measure the political strength of the President, Justices' preferences, the Solicitor General's opinion, and some of the specific characteristics of each case.

Political Environment

The theory presented above suggests that Justices' votes adjust partially to reflect the President's ideal policy whenever he has the political strength to retaliate. Given an institutional structure like that of Argentina, this will in turn depend on the President's degree of control over Congress. The two "dangers" faced by Justices in Argentina over our period of analysis, apart from constitutional reform, were Court enlargement, which until the reform of 1994 could be achieved with a simple law, and impeachment, which requires a supermajority in both Chambers.

To capture Presidential control over congress, we create a set of categorical variables that allow us to distinguish the various political scenarios. Democratic governments are classified at the time of each Supreme Court's decision as "Unified" or "Divided," generating two variables for democratic periods, UNIFGOV and DIVGOV. By "unified government" we understand the situation in which the presidential party has an absolute (more than 50 percent) or relative (plurality) majority in both chambers of Congress. Governments that are not "unified" are "divided."

To reflect the difference between the court enlargement potential and the (tougher) impeachment, we distinguished two cases within the unified government case. UNIFGOV-SIMPLE indicates that while the government can be classified as a unified government, the President does not have the majority required to impeach Supreme Court Justices. On the other hand, UNIFGOV-SUPER indicates that the President not only controls a unified government, but also has the supermajority required to

lower court decision was questioned (*arbitrariedad*) and cases in which the constitutionality of *the interpretation of a norm* by a lower court was questioned *but not the norm in itself*, were excluded.

[22]Cases in which the Supreme Court decided not to pronounce over the constitutionality of the challenged norm, alleging *formal* or *technical* reasons, were also excluded. This is in fact a very disparate category, including multiple types of issues, like lack of foundation, improper presentation, "political question," and so on and so forth. See Molinelli (1999). For this condition to substantially bias the sample, it has to be the case that the Court facing a government decisions it dislikes, but one which it cannot oppose because of the fear of reprisals, chooses to decline to review it based on "technical" reasons. To explore this potential bias we divided the sample in democratic and dictatorship periods. We find that the probability of the Court rejecting to consider a case for technical reasons is the same (around 22 percent) in both democratic and dictatorship periods. Thus, we do not believe that this sample selection biases our results.

[23]While these criteria may lose some relevant information, since we are focusing on the interaction of the Court with Federal political institutions, this risk is relatively small. The loss of information is mainly bounded to appear in cases that consider provincial norms and low level administrative resolutions—instead of laws or Presidential decrees, both instances where the potential for political conflict is reduced. Additionally, there could be some loss of data in cases where the Court decided the constitutionality of the challenged norm, but for political reasons they were considered "less relevant" by *La Ley*. Such could be the case with highly politically charged cases during military regimes—although the data set includes several highly charged cases, like that of Jacobo Timmerman, a famous Jewish journalist and newspaper owner jailed for opposing the military regime.

[24]Ideology is not the only determinant of voting, but also politics. And without a proper modeling of ideology in the Congress (see more below), it becomes difficult to move the model to a single dimension.

[25]Whenever two or more norms were involved in the same case, CONSTITUTIONAL takes the value 1 when all of them were considered by the Court to be in agreement with the Constitution.

successfully impeaching Supreme Court Justices. The complement to these three scenarios (DIVGOV, UNIFGOV-SIMPLE, and UNIFGOV-SUPER) is DICTATORSHIP, which takes the value 1 whenever the Presidency is occupied by a dictator and 0 when the President is democratic.

Additionally, we also want to capture the fact that the political strength of the government depends on the foreseeable horizon in office. For this reason, we introduce the variable TIMETOPOLCH, which measures—at each point in time—the expected time remaining for a change in the political tendency of the President (for a President to be replaced by a President of opposing political tendency). In building TIMETOPOLCH we assume perfect foresight, so that that the *expected* time of change of the political tendency of the President is indeed the *actual* time for such a change to occur.[26]

Justices' preferences. An important part of the empirical exercise is to account for Justices' preferences over policies, and through it, to measure the importance of appointing "friendly" Justices. "Measuring" preferences is obviously not an easy task. A first approximation would be to create an absolute index over time reflecting more or less liberal positions of Judges and Congress derived from voting behavior.[27] Nevertheless, the absence of strong national political parties with fairly stable positions in the policy spectrum, and the scarcity of roll-call data, makes this a very difficult task in Argentina.[28] Here, instead, we compute the extent of political alignment between the Justice and the sitting President by examining the appointment process. The basic idea is to look whether the justice was appointed by the sitting president, a friendly (past) president or a (past) president from an opposition party, combining this with the appointing president's control over the senate.

To explain the way we compute our political opposition variable (POLOPOS), assume initially that Congress does not participate in appointing the Justices. That is, the President can appoint whomever she wants. In this case, the President would appoint a justice with preferences identical to her own. During this President's tenure, the justice has a 100 percent political alignment. Thus, our political opposition variable, POLOPOS, will take a value of 0 for that particular Justice, reflecting that the President and the Justice have the same political tendency. Assume now that a new President is elected, and that the Justice is still at the Court. Since we are assuming that the Justice is a perfect clone of the nominating president, the value of POLOPOS assigned to the Justice will depend on the comparison of the two presidents' political tendencies. If the new president has the "same political tendency" of the former president, the value of POLOPOS will still be 0. If the new president has an "opposing political tendency," POLOPOS will take the value 1.[29]

Prior to its reform in 1994, the Argentinean Constitution established that Supreme Court candidates must be nominated by the President and approved by the Senate by a simple majority. Since 1994, a two-thirds majority in the Senate is required. To get a more accurate description of the Argentinean appointment process, we modify the POLOPOS variable as follows: Whenever the President has the required majority in the senate, we assume that the President can appoint her most preferred judicial type.[30] However, when the President doesn't have the required majority in the Senate, the equilibrium nomination will reflect a bargaining between the President and the opposition in the upper house.

We assume this bargaining game to take the following form. We give the value of 0 to the position of the President in the policy opposition spectrum. An opposed Senate, then, has a value of 1 in the policy opposition spectrum.[31] Whenever a vacancy appears, the President has to produce a nomination. If the Senate does not accept this particular candidate, the position remains vacant. In this case, the position of the median voter of the incomplete Court (call this MVI) becomes the status quo, and the payoff that this situation provides to the players becomes their outside value in the bargaining game. The President would like, as in the previous exercise, to nominate a "clone," but anticipates that this would not be accepted by an opposing Senate, as it would not accept a Justice of a type located further away from

[26] See Helmke (1999) was coded as a dummy variable taking the value 1 whenever the time remaining until change was less than 24 months.

[27] See Bergara, Richman, and Spiller (1999) and Segal (1997).

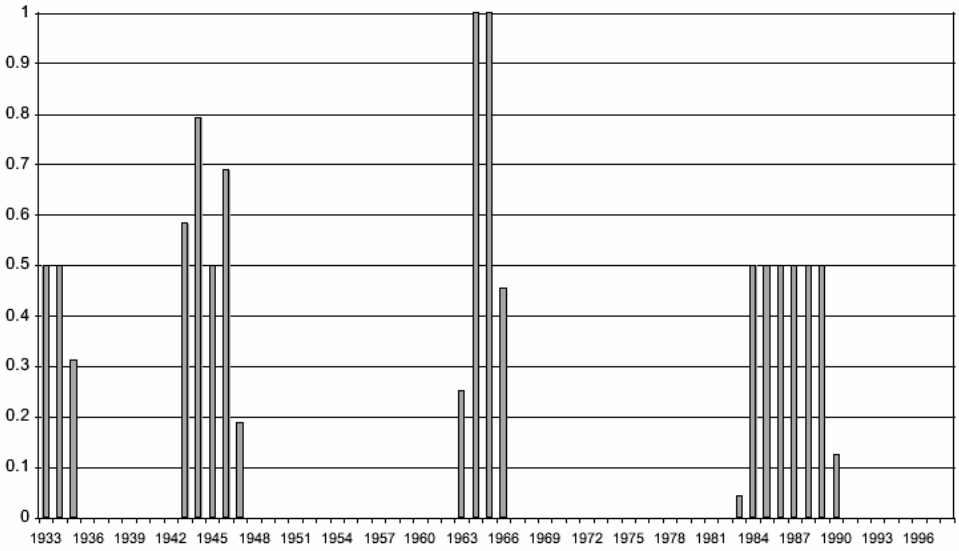
[28] See Spiller and Tommasi (2000).

[29] This method allows us to classify Justices' and Presidents' preferences along the complete sample (1935–1998) without having to use a common measure for Presidents "located" far in time and political environments. This would be a daunting task given the absence of strong national political parties with fairly stable positions in the policy spectrum. Instead, we only need to compare presidents who "share" Justices, which given the volatility in the Court, substantially simplifies the task. A similar method is what gives continuity to the "nominate" approach. See Poole and Rosenthal (1991).

[30] We assume that loyal legislators will accept the President's nomination without imposing a cost.

[31] Since the President lacks a sufficient majority, the President must bargain with the opposition. As mentioned before, given the scarcity of roll calls, it is almost impossible to quantify the "degree" of political opposition of the opposition. Thus, we give it a value of 1 to its political opposition.

FIGURE 2 Median Justice Degree of Political Opposition, 1935–1998



Source: Author's own computation based on data in Molinelli, Palanza, Sin.

its policy ideal than the MVI. Since the President, in turn, will not nominate a justice of a type that is more distant than the MVI, in this simple game an equilibrium appointment is a person of type identical to the MVI.[32]

This procedure is used to calculate our political opposition variable for the entire sample, POLOPOS. Figure 2 shows the value of POLOPOS for the median judge across the entire sample (1935–1997). Only seldom did a President have to deal with a median justice named by the opposition.[33]

Not all justices' votes, however, will matter in determining a case. While a justice who cannot influence the outcome may vote in a nonstrategic fashion, as his or her vote will bring no credible political response, such behavior by a pivotal justice may be politically costly. Since the final decision of the Court is the aggregation of these decisions by majority rule voting, we expect a different behavior of a judge when he or she can or cannot influence the final outcome. Thus, we introduce a categorical variable (PIVOTAL) indicating whether, for a given decision, a given judge is or is not—individually, and taking all the other justices' votes as given—a pivotal voter.[34]

Information for each case. Each case raises specific issues. We attempt partially to capture these by considering variables that describe, in different dimensions, some basic characteristics of the norms that are being challenged. The first of these variables is LAW, which takes the value

[32]Our method may be inaccurate when multiple appointments are considered at the same time. In this case appointments away from the MVI are feasible, as long as they are balanced (i.e., one to each side of the MVI). Snyder and Weingast (2000) develop a slightly similar model of appointment for NLRB commissioners.

[33]Since prior political experience may reflect a more politically attuned justice, we also collected, from Molinelli, Palanza, and Sin (1999), the complete employment history of the 69 justices in our sample (three at different times). In particular, we are interested in whether justices have political positions prior to and/or following their tenure in the Court. We define two variables: POLCARPREV taking the value 1 if the judge held a political position (Chief Executive, Minister or Legislator, either in the National or Provincial levels of government) prior to his or her tenure at the Court; POLCARPOST taking the value 1 if the judge held a political position after the Court.

[34]We construct PIVOTAL as follows: for each decision we look at whether each justice changing his or her vote will change the decisions. Thus, for decisions which are not narrow, i.e., seven to two in a nine-members court, no justice is PIVOTAL. For narrow decisions (say, five to four), all justices in the majority are PIVOTAL and none in the minority are PIVOTAL. We assume away the forming of stable log-rolling coalitions within the Court.

1 when the challenge is to a federal law, and 0 when the case challenges executive decrees or resolutions. We expect the coefficient of this variable to be positive. First, the enactment of a law requires the agreement of a larger number of actors with (potentially) diverse preferences, which makes it more likely that these norms will be in a less extreme location in the policy preference spectrum than Presidential decrees. Additionally, to retaliate against a challenge to a Presidential decree requires the President to garner support in Congress, a support that must already exist if the challenge is to a Law.

While so far we have assumed that the President's coalition is interested in maintaining all existing norms, it is quite possible that the President is less interested in maintaining norms that were enacted by previous governments. To explore this possibility, we introduce, for a subset of the sample, a categorical variable (CURRENTNORM), that indicates whether the norm is contemporary (CURRENTNORM=1) or not (CURRENTNORM=0) to the sitting President. Unfortunately, the database only allowed to collect this information for a subset of the sample (862 cases).

Additionally, since it could be argued that democratic administrations may want to repeal norms introduced by military governments (and vice versa), we classified norms according to the nature of the government that made the original norm and of the ruling government when the Court made its determination on the norm's constitutionality. This creates six categorical variables reflecting these combinations (dictatorships only issue one type of norm, the "decree-law "). [35] We were also able to classify, for a different subset of the sample, the challenged norms according to their subject (Administrative, Constitutional, Labor, Social Security, Fiscal, Civil, Commercial, Contraventional, and Penal).

The Solicitor General. The Solicitor General (*Procurador General de la Nación*—SG) is the head of the Public Ministry, which houses all the prosecutors who perform in front of national courts, including the Supreme Court.

In spite of the importance of this body, its role and institutional characterization were not clear until the 1994 reform, which established it as an independent body, having both functional and financial autonomy. Several authors highlight the division in the doctrine among those who regarded the Public Ministry (and the SG) as part of the judiciary and those who considered it to be a "simple administrative body, and hence dependent of the Executive." [36] This division is found both in Court's jurisprudence and the legal system regulating the Public Ministry. [37] In fact, even the prosecutors' appointment procedure was unclear. [38]

This confusion hides an important difference. Were the SG dependent on the Executive, the SG's opinion could be taken to represent a mixture of the Executive's will and the abstract quality of the case. The SG would in this case act as a noisy signal of the President's interest. If the SG was independent, however, his opinion could be taken to represent a good signal of the specific legal quality of the case. In this case, the residual (and not the direct) effects would represent "politics". [39]

We introduce two variables that indicate the opinion of the Solicitor General. SGCONST equals 1 if the SG supports the constitutionality of the norm and zero otherwise, and SGFORMAL equals 1 when the SG supports dismissal based purely on formal reasons ("*Defecto formal*"). [40] We have information on the Solicitor General only for the earlier period (1935–1982), as Molinelli

[35] These include: (a) laws passed during democracy being reviewed during a democratic administration, and (b) its equivalent for a presidential decree: (c) laws issued during democratic periods, but reviewed during *de-facto* administrations, and (d) its equivalent for a presidential decree; (e) *decree-laws* passed during *de-facto* administrations and reviewed under democratic administrations, and (f) *decree-laws* passed during *de facto* administrations and reviewed under *de-facto* administrations.

[36] See Ekmekdjian (1999), Ziulu (1998), and Molinelli, Palanza, and Sin (1999).

[37] See Ziulu (1998) and Ekmekdjian (1999) for examples of contradictory jurisprudence.

[38] Molinelli, Palanza, and Sin report that "the Solicitor General was appointed with the agreement of the Senate, which according to some experts opinion was unconstitutional" (1999, 651).

[39] It could be argued that our measures of unified government are a proxy for legislative quality and that facing no checks and balances, dictatorships produce legislation of the lowest quality, while divided governments, because of the need to produce consensus among competing political parties, would produce norms of the highest quality. Thus, dictatorships should be reversed more often than unified governments, and these should be reversed more often than divided governments. This latter prediction is the opposite to that predicted by strategic considerations. An exactly opposite argument can be made, though. The bargaining process surrounding the drafting of laws takes place in an iterative manner, where in later rounds paragraphs and then words are bargained over, oftentimes leading to pieces of legislation of dubious logical integrity; and this event is more likely the more "divided" the government.

[40] While we do not consider the cases in which the Court decides based on the "Defecto Formal" reason, we have cases considered by the Court but where the SG recommended "Defecto Formal." It must also be noted that introducing the SG's opinion entails a large loss of data, since information on the SG opinion is available only for a fraction of the 1935–1982 sample.

TABLE 1 Sample Information and Variable Definition

Variable	Definition	Obs	Mean	Std.Dev	Min	Max
Aggregate Court						
CONSTITUTIONAL	1 if norm is found constitutional	1051	0.71	0.46	0	1
UNIFIEDSUPER	1 if government holds sufficient majorities to impeach a judge	1052	0.14	0.34	0	1
UNIFIEDSIMPLE	1 if government controls both houses but not enough to impeach a judge	1053	0.31	0.46	0	1
DIVGOV	1 if government does not control congress	1053	0.15	0.35	0	1
POLOPOS-Median	median judge value of political opposition	1048	0.15	0.29	0	1
LAW	1 if norm is a law	1053	0.56	0.50	0	1
PERCENTPOLOP	percentage of justices appointed by politically opposed presidents	1048	0.20	0.29	0	1
DICTATORSHIP	1 if government was not elected	1052	0.41	0.49	0	1
CURRENTNORM	1 if norm issued during current government	862	0.24	0.43	0	1
SGCONST	1 if solicitor general opines court should find norm to be constitutional	576	0.63	0.48	0	1
SGFORMAL	1 if solicitor general opines court should not take case because of a formal defect	576	0.15	0.35	0	1
Individual Justices						
CONSTITUTIONALj	1 if judge voted norm to be constitutional	5318	0.640	0.480	0	1
UNIFIEDSUPER	1 if government holds sufficient majorities to impeach a judge	5781	0.123	0.328	0	1
UNIFIEDSIMPLE	1 if government controls both houses but not enough to impeach a judge	5786	0.382	0.486	0	1
DIVGOV	1 if government does not control congress	5786	0.134	0.340	0	1
POLOPOS	judge's value of political opposition	5781	0.198	0.333	0	1
POLPIV	POLOPOS times PIVOTAL	5513	0.054	0.205	0	1
LAW	1 if norm is a law	5786	0.568	0.495	0	1
TIMETOPOLCH	Months to change in political tendency of president	5781	48.683	33.974	1	146
PREVCARP	1 if justice held a political position prior to appointment	5781	0.270	0.444	0	1
POSCARP	1 if justice held a political position after tenure at the court	5781	0.028	0.166	0	1
SGCONST	1 if solicitor general opines court should find norm to be constitutional	2984	0.624	0.484	0	1
SGFORMAL	1 if solicitor general opines court should not take case because of a formal defect	2984	0.149	0.357	0	1
CURRENTNORM	1 if norm issued during current government	4756	0.256	0.437	0	1
DICTATORSHIP	1 if government was not elected	5781	0.361	0.480	0	1

(1999) did not collect that information in his original study. Thus, from the 1052 national cases, we have SG information only for 576. Table 1 provides sample statistics and variable definitions.

Empirical Results

As in Molinelli (1999) and Helmke (1998,1999), we find that roughly in 30 percent of all important cases considered between 1935 and 1997, the Supreme Court found

the challenged norms to be unconstitutional (See Table 1). Whether this percentage is small or large, we cannot tell. Some nontrivial constitutional control is being practiced, however. Before presenting the results of our econometric analysis, it is interesting to compare Court rulings in relation to federal versus local norms. Since local governments' capacity to retaliate against the Court is null or very small we don't expect justices to feel constrained in these cases. While the Court ruled favorably in national norms 71 percent of the times, it did so only in 47 percent of the cases considering local norms. This result provides initial support to our strategic theory of judicial behavior. But we are not just concerned with reversals. We explore next the behavioral determinants of these events.

The court's vote as the unit of analysis. Table 2 shows the results obtained from the estimation of five logit equations. The dependent variable is CONSTITUTIONAL, and the independent variables are measures of the political environment, Justices' preferences, the opinion of the Solicitor General, and case specific variables.

The table contains two different types of information. The first part of the table shows for each independent variable: the estimated raw coefficient, the value of the z-statistic, and the differential effect over the probability of a pro-constitutional outcome of a discrete change in the independent variable. This discrete change is computed, for categorical variables, as having that characteristic (as opposed to not having it), and as one standard deviation increase for the continuous variables (POLOPOS-Median, the degree of political opposition of the median justice, and PERCENTPOLOP, the percent of Justices appointed by Presidents of opposing political tendency). For these latter type variables, we also show the effect of changing them from the lowest to the highest possible value. The second part of the table shows sample information, the LR test, and different measures of the goodness of fit.

In Equation 1a (as in all the other equations) the political environment is captured through UNIFIEDSUPER, UNIFIEDSIMPLE, and DIVGOV (DICTATORSHIP is the default). In addition, Justices' preferences are approximated by POLOPOS-Median. The value of the coefficient for the political environment variables has to be interpreted as the impact on the probability of a challenge under the given political environment over a military government. The first result to be noted, then, is that the Court treats military governments with as much deference as it treated democratic divided governments. The Court, however, gave much more deference to unified governments. Indeed, and according to the theory's prediction, the coefficients of UNIFIEDSIMPLE and UNIFIEDSUPER are highly significant and meaningful: the President having a sufficient majority to change court size produces a 13 percent increase in the probability of a favorable outcome; having a majority sufficient to impeach Justices produces a 23 percent increase in the probability of a favorable outcome. Hence, both cases differ substantially from the divided government case (whose impact is not statistically significantly different from military governments). Additionally, the coefficient of LAW is also, as expected, significant and positive. When the challenged norm is a law, as opposed to a presidential decree or Resolution, the probability of a pro-constitutional decision rises by more than 14 percent.[41]

Finally, as predicted by the theory, the degree of political opposition of the median justice, POLOPOS-Median, is negative, but neither its significance nor its magnitude are high. A one standard deviation increase of POLOPS-Median reduces the estimated probability by only 2 percent, and a change in its value from 0 to 1 ("clone" versus "totally opposed") by only 7 percent.[42]

Since this result could in part be caused by the (inadequate?) use of the Median Voter Theorem assumption, we estimate the same equation using PERCENTPOLOP (percent of Court Justices appointed by Presidents of opposing political tendency) as a measure of judicial preferences. While the other variables' coefficients remained practically unchanged, PERCENTPOLOP's coefficient is negative and statistically significant.

Equation 3a explores the sensitivity of these results to the difference between contemporary and "old" norms. Since we only have information on the origin of the norm for the earlier sample, the results are not directly comparable. Nevertheless, all other variables remain roughly unchanged to the results in Equation 1a. The coefficient of CURRENTNORM is, as expected, positive, and important. The probability of approving the constitutionality of a norm enacted during the current administration is

[41] The results presented in Tables 2 and 3 use the standard maximum-likelihood variance estimator. While the robust variance estimator would be an adequate choice for a misspecified model, if this is not the case the ML variance estimator is theoretically more efficient. See, for example, Sribney (1998). In any case, the results remain essentially unchanged using the robust variance estimator.

[42] It should be noted that these results do not change when we restrict to consider only democratic periods. UNIFIEDSUPER, UNIFIEDSIMPLE, and LAW remain strongly statistically significant and meaningful in terms of magnitude: Comparing to a "Divided Government" situation, UNIFIEDSIMPLE increases the probability of a favorable outcome by 12.1 percent, and UNIFIEDSUPER by 22.3 percent. Additionally, changing POLOPOS-median from 0 to 1 produces a 1.2 percent decrease in the probability of a favorable outcome, while LAW increases it by 13.9 percent.

Table 2 Determinants of Supreme Court Pro-Constitutional Decisions: Court Level

		Eq.1a	Eq.2a	Eq.3a	Eq.4a	Eq.5a
	CONSTANT	0.20 1.57	0.28 2.09	0.14 0.92	–2.17 –6.68	–2.11 –6.43
Political Environment	UNIFIEDSUPER	1.29 *(5.01)* **22.8%**	1.31 *(5.08)* **23.3%**	1.40 *(4.81)* **244%**	2.13 *(4.59)* **26.9%**	2.27 *(4.82)* **29.1%**
	UNIFIEDSIMPLE	0.62 *(3.70)* **12.9%**	0.72 *(4.18)* **14.8%**	0.63 *(3.43)* **13.3%**	1.01 *(3.22)* **17.5%**	1.17 *(3.64)* **20.3%**
	DIVGOV	0.06 *(0.31)* **1.4%**	0.02 *(0.12)* **0.5%**	0.22 *(0.95)* **5.1%**	–0.53 *–(1.52)* **–12.5%**	–0.04 *–(0.11)* **–0.9%**
Justices' Preferences	POLOP-Median	–0.33 *–(1.38)* **–2.0%**		–0.25 *–(0.91)* **–1.5%**	–0.98 *–(2.30)* **–5.1%**	
	PERCENTPOLOP		0.72 *–(3.05)* **–4.5%**			–1.53 *–(3.67)* **–8.6%**
	Discrete Change	**–7.0%**	**–15.7%**	**–5.3%**	**–20.2%**	**–31.6%**
SG	SGCONST				3.50 *(11.55)* **68.8%**	3.55 *(11.55)* **69.3%**
	SGFORMAL				2.55 *(7.09)* **56.3%**	2.55 *(7.02)* **56.2%**
Case	LAW	0.71 *(4.99)* **14.5%**	0.70 *(4.94)* **14.4%**	0.56 *(3.50)* **11.4%**	0.82 *(3.35)* **14.5%**	0.85 *(3.44)* **14.9%**
	CURRENTNORM			0.34 *(1.83)* **6.7%**		
Sample	Sample			C-NORM	SG	SG
	N obs.	1047	1047	858	571	571
	Prob > LR ÷ 2	0.000	0.000	0.000	0.000	0.000
Goodness of Fit	Prob > Pear. Chi2	0.340	0.015	0.000	0.000	0.000
	Area u/ROC curve	64%	65%	65%	85%	87%
	Sensitivity	61%	72%	51%	85%	85%
	Specificity	57%	50%	71%	75%	75%
	Pos. Pred. Value	77%	77%	81%	89%	89%
	Neg. Pred. Value	38%	42%	37%	68%	67%
	Correctly Classified	60%	65%	57%	82%	82%

higher by almost 7 percent than that of a norm enacted under a previous administration, further suggesting strategic thinking by the Court.[43]

[43] This specification also includes, but not reported, a richer set of controls.

We introduce the Solicitor General in Equations 4a and 5a. Again, information on the SG is available only for the earlier period, thus limiting the sample size. The coefficients of SGCONST and SGFORMAL are positive and highly significant and have a large impact on the

probability of a pro-constitutional outcome. When the SG supports not considering the case alleging "*Defecto Formal*" the probability of a pro-constitutional outcome rises by 56 percent, and when the SG supports the constitutionality directly, by 69 percent (in both cases, as opposed to the situation in which the SC supports the unconstitutionality of the norm). Additionally, the effect of the political environment variables remains unchanged, and—different from Equation 1a—Court's preferences, measured by POLOPOS-Median, are also significant and relatively relevant (–5.1 percent and –20.2 percent). Equation 5a repeats this exercise, but introducing PERCENTPOLOP. Again, the SG's variables are highly significant and relevant, and the power of the other variables rises.

The second part of the table shows the global significance of the variables in the equations and their predictive potential. While the global significance (see the LR-χ^2 test) of the variables used is always good, the predictive potential of the specified models is mediocre,[44] with the exceptions of Equations 4 and 5, which use the information on the opinion of the Solicitor General. The results are robust to the inclusion of additional controls, such as repeated norms in different cases, litigants in each case, and case subject area.

Individual justices as the unit of analysis. Table 3 shows the results using the individual justice as the unit of analysis. In the four equations presented in this table, we use a fixed effects logit model—grouping by individual justices—in which the dependent variable is CONSTITUTIONALj.[45]

Notwithstanding this basic difference, Eq.1b is similar to Eq.1a in Table 2, with two differences. First, in the preferences' side of the equation, Eq.1b introduces POLOPOSj (the extent of political opposition of justice j) and POLPIV, which interacts POLOPOSj with the PIVOTAL indicator. As the Table shows, POLOPOSj's coefficient is not statistically significant, which might be expected since this reflects the preferences of nonpivotal justices. POLPIV's coefficient, however, is significant and quantitatively important. Globally, these two variables combine to produce a 16.7 percent decrease in the probability of a favorable outcome when a pivotal justice is not "friendly."[46] Second, in the political environment side we continue using UNIFIEDSUPER, UNIFIEDSIMPLE and GOVDIV as measures of the political environment, but we now add TIMETOPOLCH, the time remaining for a change in the political tendency of the President. TIMETOPOLCH's coefficient is positive, indicating that the longer the time remaining for a change in the political tendency of the President, the higher the probability of a pro-constitutionality decision. As before, the different behavior towards unified and divided governments is reflected in the estimates, and the coefficient of LAW is positive and statistically significant.

Eq.2b introduces the SG. Again, the effect of the SG's opinion is strong (although not as quantitatively important as in Table 2), and the characteristics of both preferences and reaction to the political environment remain basically unchanged. The connection between the behavior of the SG and the political environment is further explored in Eq.3b. To test the "signaling device" hypothesis of the SG, we introduce a series of interaction terms between the opinion of the Solicitor General and the political environment. If the SG views' reflected the opinion of the President, then the Court should pay more attention to the SG when the President has a stronger hold on the

[44] The following measures of fit are presented: Sensitivity, Specificity, Positive Predictive Value, Negative Predictive Value. These are, respectively, the percent of hits when the dependent variable is 1; the percent of hits when the dependent variable is 0; the number of correctly classified as 1 as a proportion of the number of cases classified as 1; and the number of correctly classified as 0 as a proportion of the number of cases classified as 0. The table also shows the total percent of cases correctly classified. The percentage of correctly classified cases is heavily dependent upon the choice of cut-off point. Although there is not a unique criterion to choose this cut-off point, here we use the mean of the dependent variable. We also compute the area under the ROC curve, which overcomes the indeterminacy of the cut-off problem. In a ROC curve, the sensitivity and specificity (1-specificity) are plotted for the various cut-off points. An area under the curve close to one (which is the maximum value this area can attain) indicates a good prediction, while an area close to one-half indicates a poor prediction. See Afifi and Clark (1998).

[45] Comparable results for the Random Effects logit model are presented in Table 4. The main results of the article remain unchallenged employing this alternative methodology. In spite of its potential problems, we followed the fixed effects estimation because as Greene (2001) notes, "the pessimism suggested by examples which are doomed from the Stara—e.g., panel models with no regressors of substance and two periods, is surely overstated. There are many applications in which the group sizes are in the dozens or more (in our case, 69 groups with an average of 67 observations per group). In such cases, there might be room for more optimism. The point is that there is a compelling virtue of the fixed effects model as compared to the alternative, the random effects model. The assumption of zero correlation between latent heterogeneity and included, observed characteristics, seems particularly severe." We estimated these models including a set of dummy variables for individual justices. Quoting Greene (2001) one more time "In principle, maximization can proceed simply by creating and including a complete set of dummy variables in the model. Surprisingly, this seems not to be common, in spite of the fact that although the theory is generally laid out in terms of a possibly infinite N, many applications involve quite a small, manageable number of groups."

[46] The results, again, do not change when we only consider democratic periods.

TABLE 3 Determinants of Supreme Court Pro-Constitutional Decisions: Individual Justice Level Fixed-Effects (Individual Justices) Logit Model

		Eq.1b	Eq.2b	Eq.3b	Eq.4b
Political Environment	UNIFIEDSUPER	0.60	0.86	2.17	0.72
		(3.35)	*(3.45)*	*(6.15)*	*(3.40)*
		13.5%	**18.4%**	**34.3%**	**16.2%**
	UNIFIEDSIMPLE	0.48	0.49	1.36	0.51
		(2.71)	*(1.98)*	*(4.27)*	*(2.24)*
		11.0%	**11.3%**	**26.3%**	**12.0%**
	DIVGOV	0.45	0.07	1.45	0.39
		(2.22)	*(0.25)*	*(3.58)*	*(1.45)*
		10.3%	**1.6%**	**27.5%**	**9.1%**
	TIMETOPOLCH	0.004	0.002	0.001	0.003
		(2.84)	*(0.74)*	*(0.34)*	*(1.32)*
		3.1%	**1.3%**	**0.6%**	**2.1%**
Justices' Preferences	POLOPOS	0.02	0.06	0.00	0.10
		(0.11)	*(0.32)*	*(0.02)*	*(0.57)*
		0.1%	**0.5%**	**0.0%**	**0.8%**
	POLPIV	–0.71	–0.39	–0.36	–0.66
		–(4.33)	*–(1.62)*	*–(1.53)*	*–(3.22)*
		–3.3%	**–1.9%**	**–1.8%**	**–3.3%**
	DISCRETE	**–16.7%**	**–7.7%**	**–8.5%**	**–13.6%**
SG	SGCONST		1.94	2.65	
			(18.17)	*(15.52)*	
			44.9%	**55.7%**	
	SGFORM		1.57	2.39	
			(11.25)	*(10.85)*	
			37.4%	**52.2%**	
SG & Political Environment (Interactions)	UNIFIEDSUPER & SGCONST			–1.70	
				–(4.93)	
	Interaction Only		—	**–12.4%**	
	Combined Effect		**63.3%**	**65.1%**	
	UNIFIEDSIMPLE & SGCONST			–1.12	
				–(4.38)	
	Interaction Only		—	**–10.0%**	
	Combined Effect		**56.2%**	**61.2%**	
	DIVGOV & SGCONST			–1.55	
				–(4.19)	
	Interaction Only		—	**–11.9%**	
	Combined Effect		**46.5%**	**54.8%**	
	UNIFIEDSUPER & SGFORM			–2.05	
				–(4.25)	
	Interaction Only		—	**–13.4%**	
	Combined Effect		**55.8%**	**54.0%**	
	UNIFIEDSIMPLE & SGFORM			–0.87	
				–(2.62)	
	Interaction Only		—	**–8.5%**	
	Combined Effect		**48.7%**	**61.0%**	
	DIVGOV & SGFORM			–2.50	
				–(5.41)	
	Interaction Only		—	**–14.2%**	
	Combined Effect		**39.1%**	**25.9%**	

(continued)

TABLE 3 (*continued*)

		Eq.1b	Eq.2b	Eq.3b	Eq.4b
Case	LAW	0.51 (8.06) 11.6%	0.29 (3.17) 6.6%	0.22 (2.35) 5.1%	0.20 (2.28) 4.5%
	CURRENTNORM				0.28 (2.77) 6.4%
Control					Area
Sample	Sample N obs.	 5307	SG 2924	SC 2924	NORM & AREA 3344
Goodness of Fit	Prob > Pear. Chi2	0.000	0.000	0.000	0.000
	Area u/ROC curve	67%	77%	78%	67%
	Specificity	63%	66%	65%	68%
	Pos. Pred. Value	75%	79%	79%	75%
	Neg. Pred. Value	48%	64%	65%	48%
	Correctly Classified	63%	73%	74%	61%

legislature. But we find that, if anything, the signaling power of the SG seems to be negatively associated with the extent of political control of the President over congress. In comparison with Eq.2b, the combined effect of a pro constitutional decision of the SG and a divided government is an extra 8.3 percent higher than under a military government (54.8 percent vs. 46.5 percent), but only an extra 5.1 percent higher with a just unified regime, and an 1.8 percent higher with a strongly unified regime, thus rejecting the signaling hypothesis.[47] Finally, Equation 4b introduces, as in Table 2, the difference between contemporary and previous norms with CURRENTNORM, together with an additional control, by considering the area of the challenged legislation. [48] The results remain unchanged.

[47]We performed a strong test of the hypothesis that the Court treats the SG the same independently of Presidential control over Congress during democracies. This hypothesis was tested by estimating the model assuming that the coefficients of the interation terms were equal (for SGCONST and SGFORMAL). The likelihood ratio test shows a value of 16.40 (logL(restricted model) = −1614.18, logL(unrestricte model)=-1605.98), which exceeds the critical value of $\kappa^2(4, .01) = 13.277$. Although we reject this strong test, the pattern of coefficients does not conform to what would be expected would the SG be perceived as reflecting the view of the administration. For views of the SG in the US see, among others, Meinhold and Shull (1998), Segal (1990), and Office of the Solicitor General (1998).

[48]????tical career of the Justices. We find that Justices who in prior work were politicians are not significantly different from those who weren't. Justices who after leaving the Court become politicians, however, tended to vote more in favor of the constitutionality of norms.This last result should not imply causality, though, as the causality should go the other way. That is, "politically attuned" justices get rewarded with ex-post political employment.

Conclusion

These results, then, show that the Argentinean Court has been throughout the last century more independent than it seems. Even with the repeated "abuse" of appointment powers, it is not that the Court lacked judicial doctrines or will. Courts have behaved strategically, and when political conditions were right, politically opposed justices have shown their independence. Although the Argentine public does not have a positive view of the Courts, this article suggests that this may say less about the Court itself than about the environment in which the Court operated. Indeed, with democracy taking hold back in Argentina, there is now a higher probability of observing more divided forms of government, increasing, therefore, the chances that the Court will exercise less restrain in reviewing legislative acts and Presidential decrees. This virtuous cycle may increase the costs for Argentine politicians to threaten the Court, further augmenting the ability of the Court to exercise effective judicial review. This article also raises important issues about the concept of judicial independence. We show that judicial independence cannot be measured by the percentage of government decisions reversed. There is no absolute level that classifies a court as independent. Instead, judicial independence is a subtle concept. It relates to the extent by which a justice adjusts its decision because of the potential for political retaliation. We derive measures of potential political retaliation related to the extent of control of the executive over the legislature. We show that high degrees of political cohesiveness increase the degree of self restrain among Argentine Supreme Court justices.

TABLE 4 Determinants of Supreme Court Pro-Constitutional Decisions: Individual Justice Level Random Effects Logit Model

		Eq.1c	Eq.2c	Eq.3c	Eq.4c
Political Environment	CONSTANT	–0.05 *–(0.43)*	–0.99 *–(5.05)*	–1.45 *–(7.06)*	0.50 *(1.85)*
	UNIFIEDSUPER	0.72 *(5.13)*	0.83 *(4.21)*	2.05 *(6.64)*	0.77 *(4.81)*
	UNIFIEDSIMPLE	0.48 *(4.31)*	0.20 *(1.11)*	0.99 *(3.99)*	0.39 *(2.63)*
	DIVGOV	0.36 *(2.59)*	–0.30 *–(1.40)*	1.04 *(2.91)*	0.16 *(0.75)*
	TIMETOPOLCH	0.004 *(3.18)*	–0.001 *–(0.29)*	–0.001 *–(0.66)*	0.002 *(0.95)*
Justices' Preferences	POLOPOS	–0.07 *–(0.53)*	–0.03 *–(0.14)*	–0.09 *–(0.47)*	0.01 *–(0.05)*
	POLPIV	–0.70 *–(4.29)*	–0.39 *–(1.64)*	–0.36 *–(1.54)*	–0.64 *–(3.17)*
SG	SGCONST		1.91 *(18.21)*	2.60 *(15.68)*	
	SGFORM		1.54 *(11.18)*	2.32 *(10.77)*	
SG & Political Environment	UNIFIEDSUPER & SGCONST			–1.62 *–(4.80)*	
	UNIFIEDSIMPLE & SGCONST			–1.11 *–(4.46)*	
	DIVGOV & SGCONST			–1.50 *–(4.08)*	
	UNIFIEDSUPER & SGFORMAL			–1.97 *–(4.16)*	
	UNIFIEDSIMPLE & SGFORMAL			–0.84 *–(2.57)*	
	DIVGOV & SGFORMAL			–2.43 *–(5.28)*	
Case	LAW	0.50 *(8.01)*	0.29 *(3.25)*	0.23 *(2.52)*	0.18 *(2.18)*
	CURRENTNORM				0.28 *(2.79)*
Sample	Sample		SG	SG	NORM & AREA
	N obs.	5313			
	Prob > Wald Chi 2	0.000	0.000	0.000	0.000
	/lnsig2u std. err.	–1.476 0.228	–1.424 0.279	–1.428 0.260	–1.708 0.264
	sigma _u std. err.	0.478 0.055	0.491 0.068	0.490 0.064	0.426 0.056
	rho std. err.	0.186 0.035	0.194 0.044	0.193 0.041	0.153 0.034
	LR Test of Rho = 0	0.000	0.000	0.000	0.000

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Chapter 3

Judicial Lobbying. The Politics of Labor Law Constitutional Interpretation

3.1 Introduction

The influence of the Supreme Court on policy-making is undisputed. The theoretical literature on interest group influence on politicians, however, has put the emphasis solely on the link between lobbying and legislative outcomes. In this paper we argue that ignoring the role of the court in the policy-making process seriously undermines the analysis of lobbying in separation-of-power systems, and build on this literature to address this issue. We focus on two intimately related questions. How do the interactions between a legislature and a formally independent judiciary shape the incentives for interest groups to engage in costly lobbying activities? Under what conditions will lobbying effectively influence policy outcomes in this setting?

The literature on interest group influence on politicians considered two broad avenues through which lobbying influences policy outcomes. The first class of models encompasses different forms of vote buying in legislatures, emphasizing the role of campaign contributions (Denzau and Munger 1986; Snyder 1990, 1991; Baron 1994). The second considers what

we label informational lobbying: interest groups supply government officials with information that induces policy outcomes closer to their preferred policies (Ainsworth 1991; Austen-Smith 1993; Austen-Smith and Wright 1992; Lohmann 1995; Rasmusen 1993; Sloof and van Winden 1996). Here again the legislature is taken as the relevant policy-making arena, based (implicitly or explicitly) on the fact that the information generated by lobbyists can be related in general to the electoral salience of a lobbyist's cause (Ainsworth 1993; de Figuereido 2002).

The fact that lobbying influences exclusively the payoffs of legislators does not imply, however, that it is sensible to focus on legislatures as the relevant policy-making body. To the contrary, as long as the court has influence on policy outcomes, the asymmetric impact of lobbying on the payoffs of the court and the legislature will shape its effectiveness to affect policy in equilibrium, and thus the incentives for interest groups to engage in costly lobbying activities in the first place.

The overall effect of this asymmetry rests crucially on the relation between the judiciary and the legislature. While most judiciaries are isolated from direct public approval, they are not immune from elected politicians' influence. Indeed, in most democracies, judicial decisions are not the last word. Legislatures can normally reverse the court's statutory rulings with a simple majority, although overturning constitutional rulings normally requires a higher level of political consensus. The legislature can, furthermore, affect the court's incentives by imposing sanctions such as

court enlargements (Gely and Spiller 1992), impeachments (Iaryczower, Spiller and Tommasi 2002), and in some countries simply by not reappointing them.[24]

The court, then, can be effectively constrained in its decisions by the majorities in government. This is the essence of the so-called, "separation of powers" literature: public opinion alters judicial decisions, but does so only indirectly, by affecting the composition and preferred policies of members of the legislature (see Segal 1997 and Bergara, Richman and Spiller 2003 for a discussion).

In this paper we consider the separation-of-powers logic within a model of informative lobbying. In this environment, the political constraints faced by the court do not reflect public opinion directly, but are driven instead by the actions undertaken by an interest group. This approach shows that - under certain conditions - previous accounts of interest group influence on politicians can still survive in separation of powers systems. Furthermore, it reconciles the implications of these theoretical arguments with the weak empirical support for the connection between lobbying and legislative outcomes (Ansolabehere, de Figueiredo and Snyder 2002).[25]

The connection between rulings and (informative) lobbying implied by the separation of powers argument is not immediate, however. In this context, lobbying is strategic information transmission (Austen-Smith

[24] This is the case of El Salvador, where justices must be reappointed by the legislature. The budget could also serve as an instrument of influence. See Toma 1991.

[25] For studies finding a relation, see Stratman 1992, 1995 and 1996. See also Snyder 1992.

1993), and as such can only exist if policy is responsive to lobbying efforts in equilibrium. Under what conditions will the conclusions derived from the extended separation of powers argument be valid? We argue that the key feature to answer this question is the extent to which the information generated through lobbying can sway decisive majorities in the legislature to tighten (relax) the political constraints faced by an anti-interest group (pro-interest group) court. As long as policy is responsive to the electorate's preferences in a complete information environment, an interest group facing a more favorable disposition of the electorate will always choose a higher level of lobbying in equilibrium, thus leading to the link between policies and preferences of the electorate that would prevail under complete information. When this condition is not satisfied, however, lobbying efforts will have no return, and thus lobbying can not exist. Put in these terms, the question is whether the legislature is divided enough so that neither pro nor anti-interest group preferences of the electorate can trigger congressional reactions to lessen judicial independence.

In the next sections, we develop this argument formally, and derive several empirical implications of our analysis. We then apply this framework to study the politics of labor law constitutional interpretation in Argentina, and provide an empirical evaluation of our hypothesis using data for strikes and Supreme Court's decisions between 1935 and 1998.

3.2 Lobbying Under Separation of Powers

This section develops a formal model of informative lobbying under separation of powers. After laying out the model, we will first turn to consider equilibrium behavior in an environment of complete information. The relationship between preferences of the electorate and policy outcomes obtained in this symmetric information benchmark will prove to be the key element determining the amount and effectiveness of lobbying in the private information environment.

3.2.1 The Model

There are two individual players, the court and the interest group, and a legislature populated by a continuum of legislators with total size 1. To fix ideas, in what follows we will refer to the interest group simply as the union. Policy space is $X = [0,1]$, and given ideal policy z_i, player i has preferences over policies $x \in X$ represented by a utility function $u_i(x, z_i) = -\frac{1}{2}(x - z_i)^2$.[26] Without loss of generality, we assume that the union's ideal policy is at the right extreme of the policy space, $z_u = 1$, and refer to policy x' as being pro-labor with respect to x'' whenever $x' > x''$.

Legislators and the court differ in their responsiveness to voters. In particular, we assume that the court is completely unresponsive to the

[26] All results would go through employing Euclidean preferences with the usual properties. We present the analysis with specific functional forms to illustrate the nature of the results with closed form solutions.

position of voters in the policy space, and denote its preferred policy by $z_c \in X$. Legislators, instead, are assumed to be at least partially responsive to voters' stance on the issue. Assuming for simplicity that the distribution of voters in the policy space can be completely characterized by a single parameter $\theta \in X$, we let the ideal policy of legislator j be given by $z_L(\theta;\beta_j) \equiv \beta_j + h\theta$, where for all j, $\beta_j > 0$ and $\beta_j + h < 1$. The parameter h allows us to capture varying degrees of voters' influence on legislators' preferred policies. The degree of conflict in the legislature is captured by the distribution of points β_j across members of the legislature, which we describe by the cumulative distribution $G(.)$; i.e., for any point β, $G(\beta)$ denotes the proportion of legislators for which $\beta_j < \beta$.

Policy outcomes result from the interaction of the court and the legislature. These two bodies, in fact, share authority over policy-making, and their policy decisions can be modified or overturned by one another. In most polities, however, the elective body can always ultimately impose its will under some sufficiently demanding procedure. This final stage is the one we represent in the model: the court chooses a ruling $x_c \in X$, which can be reversed by the enactment of new legislation in the legislature with the votes of a majority $m \in [1/2,1]$ of legislators. We say that a court's ruling is "stable" in the legislature – and therefore final – if there exists no

alternative policy that would beat it in a binary choice, and denote the set of stable rulings given majority rule m by S_m.

Both legislators and the court are uninformed about the realization of θ, and have common prior beliefs represented by the cumulative distribution function $F(\cdot)$ with density $f(\cdot)$. We assume that $f(\cdot)$ has full support (i.e., $f(\theta)>0$ for all $\theta \in X$), but otherwise allow prior beliefs to be completely arbitrary. Informally, this means that legislators can potentially be very well (but not perfectly) informed about the realization of θ. In contrast, the union is perfectly informed about the realization of θ, and can potentially credibly transmit this information through lobbying, which takes here the form of strikes and public demonstrations. In particular, given a realization θ', the union can organize an observable level a of demonstrations bearing a cost $C(a,\theta')$. We will assume that $C(\cdot)$ is twice differentiable, that for every realization of the median voter θ, $C(0,\theta)=0$, $C_a(a,\theta)>0$, and that $C_{a\theta}(a,\theta)<0$; i.e., the marginal cost of lobbying is decreasing in the pro-labor stance of the population. For simplicity of exposition, we will further assume that $C(a,\theta)=a(k-\theta)$, $k>1$.

The timing of the game can thus be described as follows: *(i)* θ is realized and privately observed by the union; *(ii)* the union decides a publicly observable level of lobbying intensity a; and *(iii)* the court chooses a ruling x_c in the set of stable policies in the legislature S_m. An equilibrium

$\Gamma=\{\gamma(\cdot),x_c(\cdot),F(\cdot|a)\}$ consists of *(i)* a strategy for the union, $\gamma : X \to R_+$, mapping "types" θ to levels a of lobbying intensity, *(ii)* a strategy for the court, $x_c : R_+ \to S_m$, mapping observations of lobbying levels a to stable rulings $x_c \in S_m$, *and (iii)* beliefs $F(\,|a)$ by the court and the legislators satisfying:

(a) $\gamma(\theta) \in \arg\max_{a \in R_+} U(a, x_c(a), \theta) \quad \forall \theta \in X;$

(b) $x_c(a) \in \arg\max_{x \in X} \{u_c(x) : x \in S(m \mid a)\} \quad \forall\, a \in R_+$, and

(c) whenever $a \in \gamma(X)$, $F(\cdot|a)$ is determined using Bayes' rule.

In addition, we supplement this equilibrium concept with a refinement restricting beliefs off the equilibrium path known as criterion D1 (Banks and Sobel 1987; Cho and Kreps 1987).[27]

3.2.2 The Symmetric Information Benchmark

Our first step is to characterize, as a benchmark, the symmetric information equilibrium. Note that in this case legislators are perfectly informed about the value of θ, and the union derives no benefit from lobbying, irrespective of the preferences of the electorate. Hence, there will

[27] See the appendix for a formal statement. Intuitively, this criterion requires that on observing a deviation (an action not taken with positive probability by any type of agent in the candidate equilibrium), the uninformed agents (court and union) will infer that the deviating party belongs to the class of agents who had the greatest incentive to make the observed deviation (Bernheim 1994).

be no lobbying in equilibrium. The relationship between preferences of the electorate and policy outcomes in the symmetric information environment, however, is the key element determining the amount and effectiveness of lobbying in the private information environment.

We start by characterizing the set of stable policies in the legislature given majority rule m. Letting $\beta_L^m \equiv G^{-1}(1-m)$ and $\beta_H^m \equiv G^{-1}(m)$, it is easy to see that $S_m(\theta)=[z_L(\theta; \beta_L^m), z_L(\theta; \beta_H^m)]$. That is, β_L^m is the critical legislator for a pro-labor coalition, in the sense that any policy x to the left of her preferred policy would be replaced by a more pro-labor policy. Similarly, β_H^m is the critical legislator for an anti-labor coalition.

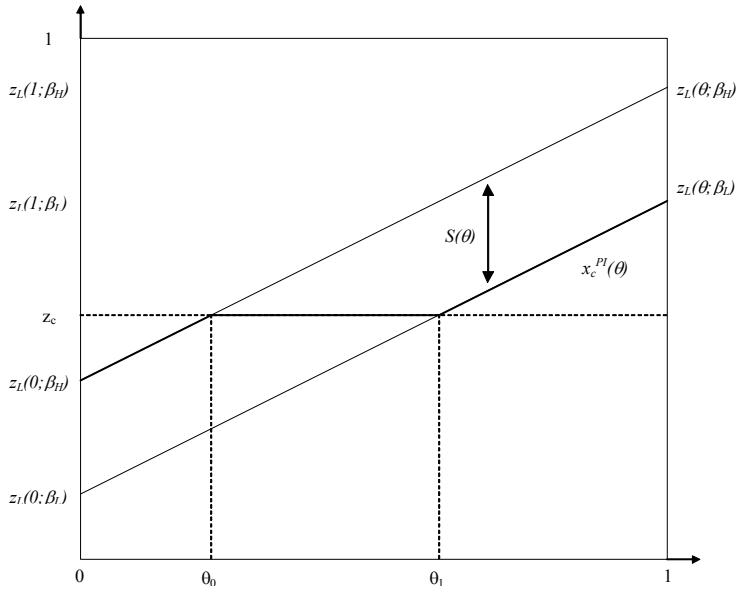
Note that $\beta_L(m) \leq \beta_H(m)$, and $\beta_L(m) = \beta_H(m)$ only with simple majority rule ($m=1/2$), in which case $S_m(\theta)$ collapses to the preferred policy of the median voter in the legislature, and the court has no policy making power. It follows that for $m > 1/2$, the set of possible court's ideal policies that would be stable given θ has positive measure.[28]

The court will then select its ideal policy unless it is constrained either for being "extremely" pro-labor or anti-labor in relation to the relevant players in the legislature. In particular, since the preferred policy of every

[28] Note that this framework allows us to accommodate different procedures for legislative approval. For example, consider the case in which a policy has to be approved by two collective bodies (House and Senate, a committee and the floor, etc) by simple majority. In this case, β_L and β_H would be given by the median voters in each chamber, $S(\theta)$ would not in general be a singleton, and the court would face a nontrivial strategic problem. To simplify the presentation, however, we continue with the benchmark interpretation of a unicameral legislature with a supermajority rule unless it is otherwise noted, and drop the m subscript when there can be no confusion.

legislator is strictly increasing in θ, a higher value of θ results in a pro-labor shift of the entire set of stable policies. A court with a fixed policy preference z_c may then become a "pro-labor" court for a legislature observing a low realization θ' ($z_c > z_L(\theta';\beta_H)$), or an "anti-labor" court for a legislature observing a high realization θ''($z_c < z_L(\theta'';\beta_L)$). Figure 3.1 depicts in bold the resulting court's equilibrium rulings as a function of the state of nature, θ.

FIGURE 3.1. Court's best response with θ public information



In the case depicted in Figure 1, $z(0;\beta_H)<z_c<z(1;\beta_L)$. The court is perceived as "pro-labor" for $\theta<\theta_0$. Here the constraint is binding and $x_c^{PI}(\theta)=z_L(\theta;\beta_H)$. Similarly, the court is perceived as "anti-labor" for $\theta>\theta_1$, and $x_c^{PI}(\theta)=z_L(\theta;\beta_L)$. For $\theta\in[\theta_0,\theta_1]$, the court is unconstrained and $x_c^{PI}(\theta)=z_c$.

The two parallel lines in the figure represent the preferences of the critical legislators as a function of the state of nature, $z_L(\theta\ ;\ \beta_L)=\beta_L+h\theta$ and $z_L(\theta\ ;\ \beta_H)=\beta_H+h\theta$. For each θ, the set of stable policies $S(\theta)$ is the segment between these lines, the interval $[\beta_L+h\theta,\ \beta_H+h\theta]$ in the vertical axis. If for some θ the court's ideal point z_c is in $S(\theta)$, the court will be able to rule according to its preferred policy, facing no effective constraint. In the example depicted in the figure, this occurs for all states between the (interior) points θ_0 and θ_1. In this region therefore the court's equilibrium ruling is represented by the flat portion of the bold line. For $\theta < \theta_0$, however, $S(\theta)$ is entirely below z_c. This means that if it were common knowledge among legislators that public sentiment is strongly anti-labor, the ideal point of the court would not survive the challenge of a more anti-labor legislation. The best choice for the court in such states is therefore to enact the most pro-labor stable ruling; i.e., $\beta_H+h\theta$. Thus, for $\theta<\theta_0$, the bold line representing court's equilibrium rulings coincides with $\beta_H+h\theta$. Similarly, for $\theta>\theta_1$, $S(\theta)$ is entirely above z_c. In this subset of states the legislature is too pro-labor compared to the court, and thus the best choice for the court in such states is to enact the most "anti-labor" stable ruling; i.e., $\beta_L+h\theta$. Proposition 3.1 below summarizes the preceding discussion.

Proposition 3.1. *Suppose that the realization of θ is public information. Then (i) $\gamma(\theta)=0$ for all θ, and (ii) there exist $\theta_0, \theta_1 \in [0,1]$, $\theta_0 \leq \theta_1$, such that:*

$$x_c^{PI}(\theta) = \begin{cases} z_L(\theta;\beta_H) = \beta_H + h\theta & \text{if} \quad \theta \leq \theta_0 \\ z_c & \text{if} \quad \theta_0 \leq \theta \leq \theta_1 \\ z_L(\theta;\beta_L) = \beta_L + h\theta & \text{if} \quad \theta \geq \theta_1 \end{cases}$$

Specifically, $\theta_0=0$ for $z_c<\beta_H$, $\theta_0=1$ for $z_c>\beta_H+h$, and $\theta_0=(z_c-\beta_H)/h$ otherwise. θ_1 is similarly defined, with β_L in place of β_H.

The court is thus effectively constrained by the legislature for some realizations of public opinion when the set $K = \{\theta : \theta \leq \theta_0 \vee \theta \geq \theta_1\}$ is non-empty. In other words, the court will be able to rule its preferred policy independently of public opinion only if this policy is both *(i)* pro-labor relative to the preferences of the critical legislator for a pro-labor coalition before a pro-labor electorate ($z_c > z_L(1;\beta_L) = \beta_L + h$) and *(ii)* anti-labor relative to the preferences of the critical legislator for an anti-labor coalition before an anti-labor electorate ($z_c < z_L(0;\beta_H) = \beta_H$). Note that, as in Gely and Spiller 1990, this condition is more likely to be satisfied when there is significant dissent in the legislature (the critical legislators for pro-

labor and anti-labor coalitions are far apart, $\beta_L << \beta_H$) and legislators are not too responsive to public opinion (h is small).

Moreover, it follows from Proposition 3.1 that, in general, the size of K increases with β_L and decreases with β_H. Thus, the set of realizations of public opinion for which the court is effectively constrained is always smaller the higher dissent in the legislature is. Proposition 3.1 does not imply, however, that the size of K should be generically lower the less responsive legislators are to public opinion. To see this, note that the set of values of θ for which a sincere ruling by the court would not face an anti-labor reversal increases with h (the court benefits, in this regard, from a more eager response of legislators to public opinion). Hence, the overall effect of legislators' responsiveness to public opinion on judicial independence depends on the relative position of the court in the policy space.

3.2.3 Informative Lobbying

The previous analysis showed that when the court is constrained for some (publicly known) preferences of the electorate, an increase in θ induces a more pro-labor ruling, and thus, a more pro-labor policy outcome in equilibrium. The first goal of this section is to show that, when policy-makers are uncertain about the realization of θ, lobbying by the interest group restores the complete information mapping between the

preferences of the electorate and policy outcomes. Suppose, for example, that the court would be constrained for some known preferences of the electorate. Then this result says that in the presence of lobbying, the court would be forced to adjust its behavior to reflect this constraint, even when it would be independent to rule according to its preferred policy given the prior beliefs of uninformed legislators. Similarly, suppose instead that the court would be independent to rule according to its preferred policy for some known preferences of the electorate. Then the court would indeed be able to rule freely in the presence of lobbying, even if it would be constrained given the prior beliefs of uninformed legislators. The result is stated formally in the next proposition (Lemma 3.1 in the Appendix provides a detailed characterization of equilibrium strategies):

Proposition 3.2. *In the unique D1 equilibrium (i) Lobbying $\gamma(\theta)$ increases with θ in K, and does not change with θ in $[\theta_0,\theta_1]$; (ii) Court's (stable) rulings $x_c(a)$ satisfy $x_c(\gamma(\theta))=x_c^{PI}(\theta)$ for every θ, where $x_c^{PI}(\theta)$ is given in proposition 1. In particular, the pro-labor tendency of rulings increases with the level of strikes; i.e., $x_c(a)$ is increasing in a.*

That is, in equilibrium the level of strikes will reflect the preferences of the electorate up to the extent that this information can influence a binding constraint for the court (and thus policy outcomes). We say, then, that strikes are effectively fully informative. As long as (informed) policy

is responsive to the electorate's preferences, two union types facing different pro-labor dispositions of the electorate will always choose different levels of lobbying, allowing the reproduction of the complete information link between policies and the preferences of the electorate.

This does not imply, however, that the equilibrium will necessarily involve transmission of information. In fact, lobbying will be completely unresponsive to the preferences of the electorate if (and only if) the court is unconstrained for every possible realization of θ. Conversely, there will be a complete separating equilibrium if (and only if) the court is constrained for every realization of public preferences. That is, only if the court's ideal policy is "extremely anti-labor" (i.e., $z_c < \beta_L$), or "extremely pro-labor" (i.e., $z_c > \beta_H+h$) by Proposition 3.1 standards.

Figure 3.2 illustrates graphically the results in Proposition 3.2. The upper panel (Figure 3.2.a.) plots the mappings from the electorate's pro-labor disposition θ to court rulings and lobbying levels in equilibrium. The result that strikes are effectively fully informative in equilibrium implies that the mapping from θ to court rulings is equivalent to the complete information behavior illustrated in Figure 3.1. Figure 3.2.a. adds to Figure 3.1 the representation of equilibrium strikes as a function of θ. The union's equilibrium strategy is strictly increasing in the subset of the state space in which the electorate's pro-labor disposition would trigger (if publicly known) a reaction by the legislature to a court's ruling, K, and

flat in the interval $[\theta_0, \theta_1]$. For every realization of the state θ, the mappings in Figure 3.2.a. provide a pair of lobbying and court rulings. The lower panel (Figure 3.2.b) plots all pairs obtained in this manner, illustrating court's equilibrium strategy $x_c(a)$.

Figure 3.2.a Lobbying and Court Rulings as a Function of θ

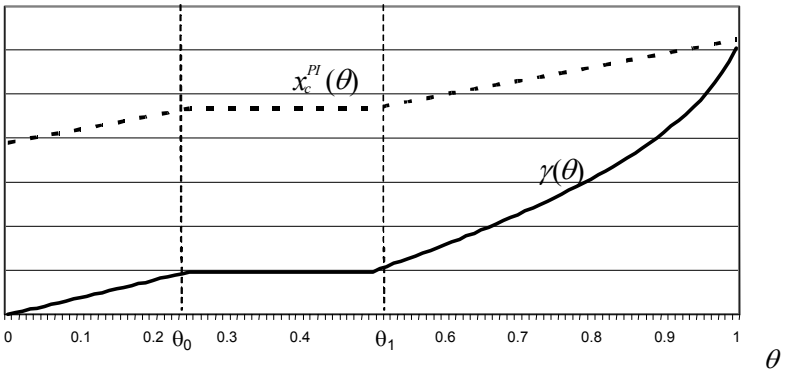
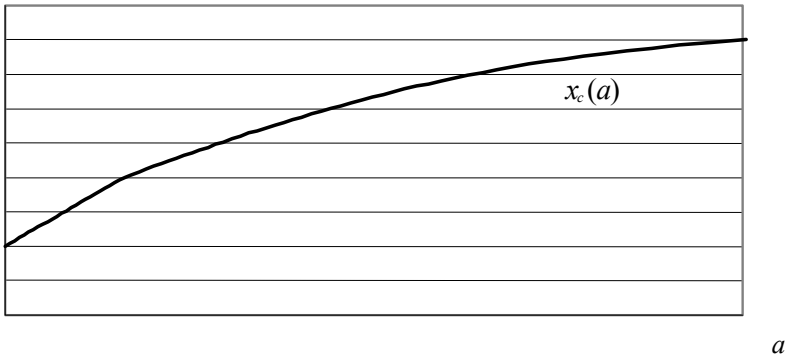


Figure 3.2.b Court's Rulings as a Function of the Level of Lobbying



Proposition 3.2 allows us to study the response of the expected level of strikes and pro-labor rulings to changes in the composition of the legislature. Note that for our purposes changes in the composition of the legislature are relevant only to the extent that they affect the boundaries of the stable set of policies in the legislature, $z_L(\theta;\beta_L)=\beta_L+h\theta$ and $z_L(\theta;\beta_H)=\beta_H+h\theta$. Moreover, recall from the analysis of the symmetric information benchmark that the set of realizations of public opinion for which the court is effectively constrained is always smaller the higher dissent in congress is. That is, in general, the size of K increases with β_L and decreases with β_H. Proposition 3.2 then directly implies the following result, and its corollary:

Proposition 3.3. *A pro-labor shift in the preferred policy of the critical legislator's for a pro-labor coalition β_L (anti-labor coalition, β_H), increases the expected pro-labor tendency of the court' rulings level $E_\theta[x_c]$, and increases (reduces) the expected level of lobbying, $E_\theta[\gamma]$.*

Corollary 3.1. *A mean preserving increase in the size of the set of stable policies in Congress reduces the expected level of strikes in equilibrium*

Proposition 3.3 also has direct implications over the response of equilibrium outcomes to changes in court's preferences. First, it is clear

from the previous analysis that the expected level of pro-labor rulings will increase following a pro-labor change in the court's preferences unless the court is constrained for every realization of θ both preceding and following this change. The change in the expected level of strikes is nevertheless ambiguous. This should come as no surprise, however, since for this purpose, increasing x_c with β_L and β_H given is qualitatively similar as simultaneously reducing both β_L and β_H taking x_c as given, and we know from Proposition 3.3 that β_L and β_H have opposite effects on the expected level of strikes.

Similarly, we know from the analysis of the symmetric information benchmark that the overall effect of legislators' responsiveness to public opinion on judicial independence depends on the relative position of the court in the policy space. This implies that any relation we could obtain between lobbying and the responsiveness of legislators to public opinion will also necessarily depend on the relative position of the court in the policy space.

3.2.4 Empirical Implications

The model has direct and empirically refutable implications. The first two implications are unique to this model. First, Proposition 2.2 states that in equilibrium the level of "pro-labor" judicial decisions is increasing in the extent of the union's political activity. Thus, we should observe

more "pro-labor" decisions when facing a higher level of union strikes. Second, the expected level of lobbying decreases the more effective the separation of powers between court and legislature is (the more divided the legislature is on the relevant issues). Specifically, as the corollary to Proposition 3.3 points out, we expect the level of strikes to be decreasing in the amplitude of the set of stable policies in the legislature.

Our model also has more standard separation of powers empirical implications. As in most separation of powers models, Proposition 3.3 implies that the equilibrium level of "pro-labor" judicial decisions depends on the political composition of the legislature (Spiller and Gely 1994; Bergara, Richman and Spiller 2002). In equilibrium, a more "pro-labor" legislature will trigger more "pro-labor" decisions provided that the court is effectively constrained by the legislature. Thus, our model provides unique, as well, as standard empirical implications concerning separation of power models. The unique implications constitute direct tests of the signaling value of interest groups lobbying.

3.3 The Politics of Labor Law Constitutional Interpretation in Argentina

In this section we apply the model to study the politics of labor law constitutional interpretation in Argentina, and provide an evaluation of

the empirical implications of our model using data for strikes and Supreme Court's decisions between 1935 and 1998.

Though far from constituting a comprehensive test of the theory developed in this paper, this case presents a relevant and natural application of the proposed framework. While formally independent, Argentina's Supreme Court has faced both implicit and explicit threats from the political powers, and has adjusted its behavior accordingly (see Helmke 2002, and Iaryczower, Spiller and Tommasi 2002). Moreover, the centralized control by unions of an institutional structure allowing the effective organization of large demonstrations have both broadened their scope of interest from industry level to national labor policies, and transformed organized demonstrations into instruments of political influence.

In this environment, the relevant assumptions we impose to the analysis translate into the following mild requirements. First, legislators are at least somewhat responsive to (but not perfectly informed about) the preferences of the electorate.[29] Second, the union knows the cost of organizing public demonstrations, and this cost decreases the more intensely voters oppose anti-labor legislation. As we have shown in the previous section, under this assumption the observed level of protests will

[29] This will generally be the case even in systems as the Argentinean, where legislators' reelection rates are low and elections depend on the nomination to party lists. First, the electoral connection constitutes an asset not only for the national legislature, but also for other elective posts such as governors, majors and subnational legislatures. Second, even if party bosses have authority over the composition of electoral lists, their position within the party rests on the support of the members of the organization, and in particular of current party legislators. Thus, they will not be able, in general, to ignore their preferences (see Chapter 1).

transmit valuable information about the preferences of the electorate to politicians in equilibrium, even if the union's slogans constitute a biased (and thus uninformative) representation of society's interests.

3.3.1 The Political Environment

According to our theoretical argument, the relative position of the court with respect to the set of stable policies in the legislature is a major factor determining both court rulings and the level of lobbying. Our first task to define the relevant independent variables, then, is to obtain an assessment of the distribution of preferences within congress along a pro-labor/anti-labor policy space.

Throughout most of the 20th century, Argentina was a strong presidential system with two dominant political parties (McGuire 1995; Manzetti 1993; Jones 2002) characterized by a relatively sharp contrast in their stance with respect to labor policies and the regulation of organized labor (Rotondaro 1971; Torre 1983; Fernandez 1988; McGuire 1997). While all presidents have sought to some extent support from (at least some fractions of) the unions, the strong association between unions and the Peronist party and the Peronist/anti-Peronist division of Argentine society defined Argentina's political reality in the second part of the 20th century. Relying on these facts, we classify each president (and its party in congress) as pro or anti-labor, and use this classification, along with the

partisan composition of the legislature, to obtain an assessment of the pro-labor composition of the Argentine Congress.

We start by classifying Argentina's presidents between 1935 and 1997 as pro-labor or anti-labor, following to the greater extent possible the "stylized facts" presented by previous studies. Presidents Farrel, Peron, and all Presidents who governed representing the Peronist Party (Campora, Lastiri, and Martinez in 1973- 1976, Menem between 1989 and 1999) were classified as pro-labor. President Frondizi (1958-1962) did not represent the Peronist party but was also classified as pro-labor.[30] The remaining presidents (mainly military dictators and democratic presidents representing the UCR Party) were classified as anti-labor.

Taking this classification as given, we use parties' representation in Congress to compute the distribution of preferences for the upper and lower chambers in each period t, $G_t^U(\cdot)$ and $G_t^L(\cdot)$. We assume, first, that legislative parties are perfectly cohesive, and that parties in the opposition have the opposite stance in the labor policy space than the president's party. The distribution of imputed preferences for legislators of chamber j in period t is in this case given by $G_t^j(x) = \omega_t^j$ for $0 \leq x < 1$ and $G_t^j(1) = 1$, where ω_t^j denotes the proportion of seats held by the anti-labor's party in chamber j in period t (we assume here that $\omega_t^j = 1$ during periods of military interruptions to the democratic regime).

[30] Peronism was banned from participating in the 1958 elections, and President Frondizi was elected with the explicit support of Peron (see, for example, McGuire 1997).

To complement the assumption of parties being perfectly cohesive, we also consider noisy identifications of legislative parties with the president. Specifically, for both the anti-labor and the pro-labor party, we assume that the proportions of party members with ideal policy closer to the extreme anti-labor (0) and pro-labor (1) policies are given by a beta distribution $B(\alpha,\beta)$ with support in [0,1], for $\beta=1$ and $\alpha=0.1$ and $\alpha=0.2$. [31] With this assumption, then, the distribution of preferences of legislators in chamber j in a democratic period t is given by $G_t^j(x;\alpha) = \omega_t^j \mathrm{B}_\alpha(x) + (1-\omega_t^j)(1-\mathrm{B}_\alpha(1-x))$.

3.3.2 Dependent Variables

The dependent variables in our study are Supreme Court's pro-labor rulings and the amount of strikes organized by the union. Specifically, we define the variable *strikes* as the number of strikes per year. [32] Rulings are based on labor and social security cases involving the constitutionality of government norms that were decided by the Supreme Court in Argentina

[31] This family of distributions is stochastically increasing in α and reduces to the uniform distribution when $\alpha = \beta = 1$. Thus, the "noise" in the identification of the legislative parties with the President increases with α.

[32] Since this data was not available from a single source for the entire period of our database (1935 – 1998), we selected what we considered to be the best possible source in our sample and generated the remaining data using the percent variation in the next best available series. The most comprehensive and reliable source is O'Donnel 2000, covering the period 1955-1972. For 1935 – 1955 we used data from Rotondaro 1971, which independently covers the period 1935 – 1968. For the period 1972 – 1998 we used Torre 1983, Fernandez 1988, and Nueva Mayoria 2001.

between 1935 and 1998. [33] Within this universe of cases, we define the categorical variable *pro-labor ruling* to take the value one (zero) if a court ruling *(i)* upholds a government norm during a pro-labor (anti-labor) presidency or *(ii)* challenges a government norm during an anti-labor (pro-labor) presidency.

3.3.3 Independent Variables

The pro-labor composition of the legislature is relevant for our purposes for two reasons. First, the appointment of a president's nominee to the Supreme Court requires the approval of the senate (by simple majority until 1994). Thus, the pro-labor composition of the senate affects directly the preferences of the court. To reflect the influence of the senate in a simple manner, we use the midpoint between the ideal point of the president and the median voter of the senate at the time of appointment as an estimate of the pro-labor disposition of each justice. The pro-labor

[33] By norms, we mean laws, presidential decrees, administrative decisions and resolutions. Cases in which the constitutionality of a lower court decision was questioned (*arbitrariedad*), and cases in which the constitutionality of the interpretation of a norm by a lower court was questioned, but not the norm in itself, were excluded. Moreover, we also excluded those cases in which the supreme court decided not to pronounce over the constitutionality of the challenged norm alleging formal or technical reasons. Finally, to avoid duplications in substance arising from the fact that the Argentine supreme court does not have the ability to determine a law as unconstitutional *per se*, but rather has to deal with the unconstitutionality of its application to a particular case (person), we limit the pool of cases to those published *in extenso* in La Ley, the main judicial publication in Argentina.

disposition of the court in each period, *pro-labor court*, is then defined as the policy preference of the court's median justice.[34]

Second, the pro-labor compositions of the upper and lower chambers determine the set of stable policies in the legislature in any given period. A ruling is stable if it does not trigger a response by a pro or an anti-labor coalition in the legislature. Since until 1994 Argentina's Constitution allowed Congress to enlarge the Supreme Court with a simple law, we will focus primarily on the critical legislators for simple majority rule in a bicameral legislature. These are denoted *pro-labor critical* and *anti-labor critical* and defined – for both the cohesive and noisy representations of legislative parties - as the minimum and maximum among the median legislators of the upper and lower chambers.[35]

The equilibrium level of pro-labor rulings and strikes depend, however, on the relative position of the court with respect to the set of stable policies in the legislature. Consider first the court. Justices will rule based solely on their preferences provided that their preferred policies are stable policies in congress, and will otherwise adjust their rulings so that these fall within the set of acceptable policies in the legislature. As a result,

[34] We do this for the cohesive and noisy representations of the legislature. Note that the median voter in the Senate at the time of appointment, T, is computed from the distributions $G_T^U(x)$ and $G_T^U(x;\alpha)$ respectively, and that therefore pro-labor court changes with each specification.

[35] We do however also include a model specified for two thirds supermajority required in both chambers. Denoting the critical legislator for a pro-labor (anti-labor) coalition in chamber $j=U,L$ by β_L^j (β_H^j), the critical legislator for pro-labor and anti-labor coalitions in this case are given by $\min\{\beta_L^U,\beta_L^L\}$ and $\max\{\beta_H^U,\beta_H^L\}$, respectively.

court's preferences will influence Justices' behavior directly only to the extent that the court is unconstrained. If instead an anti-labor court is constrained by the legislature, changes in the critical legislator for a pro-labor coalition - and not in court's preferences - will influence court's decisions. Similarly, if a pro-labor court is constrained by the legislature, changes in the critical legislator for an anti-labor coalition will influence court's decisions. We then define the following variables. *Pro-labor constraint* equals pro-labor critical if an anti-labor court is constrained (if pro-labor court < pro-labor critical) and zero otherwise. Similarly, *anti-labor constraint* equals anti-labor critical if a pro- labor court is constrained (if pro-labor court > anti-labor critical) and zero otherwise. Finally, *court unconstrained* is defined as pro-labor court if the court is unconstrained, and zero otherwise.

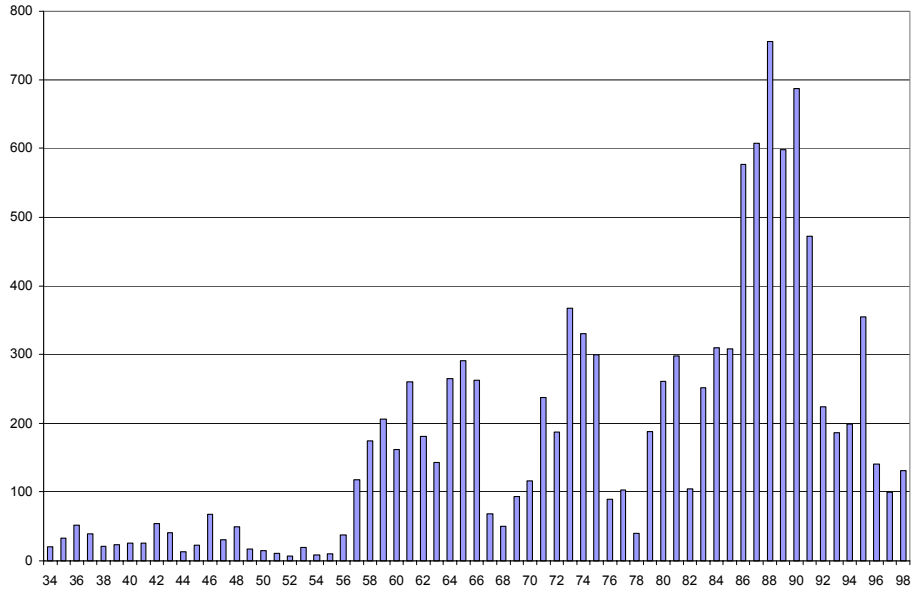
The union, on the other hand, will only engage in lobbying if policy outcomes are responsive to lobbying efforts. This implies that the expected level of lobbying (strike activity) increases the more constrained the court is, and decreases (Corollary 3.1) with the length of the set of stable policies in the legislature. We then define the variable *binding* as the distance between pro-labor court and the set of stable policies, and *length* as the distance between pro-labor critical and anti-labor critical.

We conclude by defining two control variables related to the political environment. First, up to now we have treated military governments as

the equivalent to completely unified democratic governments; i.e, governments in which the president's party controlled all seats in both houses. We want to allow, however, for possible additional effects of military governments on both rulings and strikes. To do so, we introduce the categorical variable *dictator*, which takes the value 1 in periods of interruptions to the democratic regime.

We also introduce the categorical variable *post-Peron*, which takes the value 1 for observations dated after President's Peron initial departure from office in September, 1955. As Iaryczower, Spiller and Tommasi 2002 already showed, the first administration of President Peron marked a defining moment in the relation of the polity to the judiciary. Figure 3.3 also shows, what many have already mentioned (e.g., McGuire 1997), that it also marked a defining moment in the organization of the labor movement, and in the extent of use of strikes. The categorical variable post-Peron captures these breaks.

FIGURE 3.3 Number of strikes in Argentina, 1935-1998



3.3.4 Estimation

As indicated by Proposition 3.2, court's pro-labor rulings are increasing in the observed level of strikes. The equilibrium level of strikes is in itself a response to the political environment and the relative positioning of the court in the (labor) policy space. It is not, however, a function of actual rulings by the court, which only happen after the level of strikes is observed. Specifically, for our main specification (model I), the variables in the right hand side of the pro-labor ruling equation are given by court unconstrained, pro-labor constraint, anti-labor constraint, post-Peron, and

dictator. The variables in the right hand side of the strikes equation are given by length, binding, pro-labor court, post-Peron, dictator, along with three lagged observations of the growth of GDP, included as controls.

Thus, the model to be estimated is a *triangular system* of two equations, and a *fully recursive system* if in addition the variance-covariance matrix is also diagonal. In this case, the disturbances are uncorrelated and the system can be consistently and efficiently estimated equation by equation (see Greene 2000, 678). Our first step thus is to test this hypothesis for Model I (with the data arranged in a case-based unit of analysis) employing the test suggested by Breusch and Pagan 1980 (see Greene 2000, 621). We find that the diagonal matrix hypothesis cannot be rejected, so estimation of the system by ordinary least squares equation-by-equation is indeed appropriate.

It should be noted, however, that OLS estimates can be improved upon. Since pro-labor ruling is a categorical variable, we use a logit model to estimate the conditional probability of a pro-labor ruling. Moreover, since the data for the number of strikes is only available in annual terms, the estimation of Supreme Court's decisions uses the number of strikes in the year in which the Supreme Court decided the case. Given this constraint, and the fact that we can estimate the strikes equation separately, we averaged the values of the remaining variables through each year, and estimated the strikes equation using annual data.

Table 1 presents the results for a logit specification of the pro-labor rulings equation in Model I under the cohesive and noisy representations of the legislature. The table also presents the results of Model II, which only includes observations for democratic periods.

TABLE 3.1. Logit Regressions. Dependent Variable: Pro-Labor Rulings

Variable	*Model I*			*Model II*		
	Cohesive	*Noisy (0.1)*	*Noisy (0.2)*	*Cohesive*	*Noisy (0.1)*	*Noisy (0.2)*
Strikes	0.003 ***	0.003 ***	0.003 ***	0.003 **	0.003 **	0.003 **
	(0.001)	*(0.001)*	*(0.001)*	*(0.002)*	*(0.001)*	*(0.001)*
Court unconstrained	1.437 ***	2.829 *	n.o.	1.856 ***	3.799 **	n.o.
	(0.493)	*(1.497)*		*(0.551)*	*(1.591)*	
Pro-labor constraint	1.144	1.128	1.147	2.414 **	2.955 **	3.626 **
	(0.734)	*(0.820)*	*(0.968)*	*(1.135)*	*(1.299)*	*(1.568)*
Anti-labor constraint	n.o.	1.565 ***	1.927 ***	n.o.	2.307 ***	3.126 ***
		(0.496)	*(0.610)*		*(0.627)*	*(0.850)*
Post-Peron	-1.558 ***	-1.449 ***	-1.328 ***	-1.891 ***	-1.728 ***	-1.402 ***
	(0.506)	*(0.462)*	*(0.473)*	*(0.620)*	*(0.554)*	*(0.554)*
Dictator	1.064 **	1.027 **	1.083 **			
	(0.541)	*(0.480)*	*(0.500)*			
Constant	-0.346	-0.449	-0.637	-0.460	-0.847 *	-1.470 **
	(0.405)	*(0.452)*	*(0.548)*	*(0.423)*	*(0.509)*	*(0.703)*
Database	*Standard, N=315*			*Democracy, N=178*		
			Goodness of Fit			
Prob > LR chi ^{2}	0.000	0.000	0.000	0.001	0.001	0.000
Prob > Pearson chi ^{2}	0.019	0.018	0.025	0.033	0.027	0.029
Area u / ROC curve	0.673	0.674	0.676	0.682	0.698	0.709
Correctly Classified	0.616	0.648	0.648	0.607	0.646	0.674

Note: For each coefficient, the table shows the estimated value and standard deviation (in parenthesis, below). ** p < 0.1 ; ** p < 0.05; *** p < 0.01.*

The results are consistent with the predictions of the model. As in separation of power models, the probability of a pro-labor ruling increases with the pro-labor disposition of unconstrained courts (court unconstrained) and when a binding constraint for a pro-labor court is

relaxed (an increase in anti-labor constraint).[36] The probability of a pro-labor ruling also increases when a binding constraint for an anti-labor Court is tightened. The coefficient of anti-labor constraint, however, is only statistically significant at low levels of confidence for Model I (12 % and 17 %), although it is significant at the 5 % level when we only include observations for democratic periods (Model II).

Moving towards the more unique implications of our model, we find that, consistent with Proposition 3.2, pro-labor rulings increase with the level of strikes. This result stands for both the cohesive and noisy representations of the legislature, and whether we consider all cases or only those decided in democratic periods. In particular, setting initially the value of all variables at their sample average, a one standard deviation increase in the number of strikes - 152.6 and 180.4 for the standard and democratic case-based databases - increases the probability of a pro-labor ruling by 12.1 %, 12.9 % and 13.2 % in the alternative representations of Model I, and by 12.6 % , 12.5 % and 12.4 % in Model II.

We also find that the coefficient of the categorical variable dictator is positive and statistically significant at the 5 % level. Taking into consideration that *(i)* all dictatorships following Peron were classified as anti-labor governments, and that *(ii)* dictatorships were treated as perfectly unified democratic governments in the definitions of pro-labor

[36] It should be noted that the relative position of the court and the critical legislators in the legislature varies with each specification. Thus, while there are no instances in which the political constraint is binding for a pro-labor court for "cohesive" parties, this event does indeed occur under a noisy representation of the legislature.

critical and anti-labor critical, we interpret this result as saying that dictatorships pose a lesser threat to the court than perfectly unified democratic governments.[37]

Table 3.2 presents the results of four exercises that complement the previous analysis. In Model III, we consider the model under the assumption that the relevant majority determining the constraints for the court is a supermajority of two thirds of the members of each chamber. We find that the coefficients of strikes and the preferences of unconstrained courts (court unconstrained) are still statistically significant at the 1 % confidence level. The effect of the political constraints is more difficult to evaluate, however. First, rulings are always pro-labor when the constraint for an anti-labor court is binding. In this case, these observations carry no statistical information with respect to the likelihood function and have to be removed from the estimation.[38] On the other side of the constraint, however, there are no instances of a pro-labor court being constrained by congress in the cohesive representation of the legislature, and the coefficient of anti-labor constraint is not statistically significant in the noisy representation.

[37] We also find that the probability of a pro-labor ruling decreases after Peron's presidency. We conjecture that this result might capture the reaction to the impressive development of pro-labor legislation during Peron's government.

[38] This is not to say that this variable is not relevant for the outcomes, but instead that their contribution can be replaced by the rule: "if a supermajority constraint is binding for an anti-labor court, the court will rule in favor of labor."

TABLE 3.2 Logit Regressions. Dependent Variable: Pro-Labor Rulings

	Model III		*Model IV*		*Model V*		*Model VI*	
Variable	Supermajority for Stable Set		Senate not involved in S.C. appointments		Pre-Peron		Strategic Defection	
	Cohesive	*Noisy (0.1)*	*Cohesive*	*Noisy (0.1)*	*Cohesive*	*Noisy (0.1)*	*Cohesive*	*Noisy (0.1)*
Strikes	0.004 ***	0.003 **	0.004 ***	0.003 ***	0.023	0.025	0.004 **	0.004 **
	(0.001)	*(0.001)*	*(0.001)*	*(0.001)*	*(0.025)*	*(0.025)*	*(0.002)*	*(0.002)*
Court unconstrained	1.854 ***	1.951 ***	1.066 ***	n.o.	2.282 ***	n.o.	1.920 ***	3.785 **
	(0.549)	*(0.415)*	*(0.379)*		*(0.708)*		*(0.615)*	*(1.622)*
Pro-labor constraint [a]			0.959	0.735	2.129 **	2.190 **		3.249 **
			(0.718)	*(0.749)*	*(0.916)*	*(1.011)*		*(1.414)*
Anti-labor constraint	n.o.	0.481	n.o.	1.210 ***	n.o.	2.486 ***	n.o.	2.523 ***
		(0.367)		*(0.452)*		*(0.760)*		*(0.744)*
Post-Peron	-1.942 ***	-1.205 **	-1.414	-1.327 ***			-1.751 ***	-1.574 ***
	(0.602)	*(0.530)*	*(0.482)*	*(0.452)*			*(0.621)*	*(0.579)*
Dictator			0.675	0.678			1.666 **	1.941 ***
			(0.443)	*(0.435)*			*(0.714)*	*(0.717)*
Constant	-0.540	-0.825 *	-0.136	-0.188	-1.304	-1.555	-0.649	-1.080 **
	(0.429)	*(0.432)*	*0.36316*	*(0.427)*	*(0.924)*	*(0.975)*	*(0.519)*	*(0.642)*
Database	*Democracy, N=172*		*Standard, N=315*		*Pre-Peron, N=65*		*1+ Year for a change of President, N=210*	
				Goodness of Fit				
Prob > LR chi ^{2}	0.001	0.000	0.000	0.000	0.003	0.005	0.000	0.000
Prob > Pearson chi ^{2}	0.039	0.144	0.024	0.015	0.104	0.088	0.073	0.049
Area u / ROC curve	0.670	0.751	0.669	0.659	0.769	0.761	0.671	0.698
Correctly Classified	0.593	0.686	0.616	0.625	0.754	0.754	0.592	0.643

Note: For each coefficient, the table shows the estimated value and standard deviation (in parenthesis, below). ** p < 0.1 ; ** p < 0.05; *** p < 0.01*.

[a] Positive values of pro-labor constraint predict pro-labor rulings (PLR=1) perfectly in models III, VI (observations were droppped).

Model IV considers an alternative method to capture the preferences of the court. While the appointment of president's nominees to the Supreme Court requires the approval of the senate, it can be argued that the Senate has only a formal role in this procedure. In this case, our measure of court's preferences would be improved by simply removing the influence of the Senate. We do this in Model IV, assuming that the pro-labor stance of each justice is equal to that of the nominating president. The results show that Model I performs better than Model IV according to the goodness of fit indicators. The gain, however, is only slight, suggesting that not much has been gained by considering the role of the senate in appointments to the Supreme Court. Model V considers our main specification in the period preceding President Peron. Since up to this point in time unions had a much more restrictive organizational capability, we do not expect strikes to be significantly informative about the preferences of a wide electorate. Consistent with this description, we find that although the estimated coefficient of strikes remains positive in both specifications, its statistical significance drops substantially.

Finally, Model VI considers the strategic defection hypothesis proposed by Helmke 2002. According to Helmke 2002, the political constraints faced by the court in a given period can fall short of accounting for the entire range of incentives faced by the court. The strategic defection hypothesis argues that Justices' behavior reflects not only the effect of current political constraints, but also their anticipation of the political constraints

they will face in the future. To evaluate this hypothesis in the current setting, we consider the specification of the main model in a restricted sample, including only those rulings decided one year before a change of president. We find that the precision of the estimates improves consistently, lending support to this argument.

Table 3.3 presents the results obtained from the estimation of the strikes equation. The independent variables in Model I include length, binding, pro-labor court, post-Peron, dictator, along with three lagged observations of the growth of GDP, included as controls. The results are again consistent with the empirical implications of the theory. First, according to Proposition 3.3 (and its corollary), we expect the level of strikes to increase the more constrained the court is, and decrease with the size of the stable set (the "pooling" area). These implications are in fact supported by the evidence, as indicated by the coefficients of binding and length.[39]

Table 3.3 also shows that unions were less combative during military governments, and that (as Figure 3.3 anticipated) the organization of the labor movement since Peron resulted in a higher capacity of unions to engage in political demonstrations.[40]

[39] We note, however, that length was highly collinear with pro-labor court, post-Peron and dictator in the cohesive representation of legislative parties, and was dropped from the analysis.

[40] We also find that the level of strikes decreases the more pro-labor the court is. As noted in the previous section, however, the empirical implication regarding the position of the court is ambiguous in general. Thus this finding does not provide evidence in favor or against the model.

TABLE 3.3 Dependent Variable: Strikes (Annual Observations). Least Squares Regression with Robust Standard Errors

Variable [a]	*Model I*			*Model II*		
	Cohesive	*Noisy (0.1)*	*Noisy (0.2)*	*Cohesive*	*Noisy (0.1)*	*Noisy (0.2)*
Length [b]		-180.8 **	-346.0 ***		-212.5 **	-421.2 ***
		(85.3)	*(126.4)*		*(89.1)*	*(133.9)*
Binding	223.3 ***	168.6 **	145.3 ***	219.6 ***	159.6 **	130.5 **
	(83.1)	*(63.7)*	*(51.3)*	*(82.2)*	*(65.5)*	*(54.3)*
Pro-Labor court	-106.6 **	-169.0 ***	-144.6 ***	-100.7 **	-169.8 ***	-139.1 ***
	(41.7)	*(58.6)*	*(48.0)*	*(43.5)*	*(57.7)*	*(47.0)*
Post-Peron	328.2 ***	323.1 ***	289.1 ***	328.7 ***	329.5 ***	293.5 ***
	(39.2)	*(37.0)*	*(29.7)*	*(39.3)*	*(35.5)*	*(29.4)*
Dictator	-256.8 ***	-337.7 ***	-322.1 ***	-258.8 ***	-365.5 ***	-357.2 ***
	(53.4)	*(84.2)*	*(74.3)*	*(53.4)*	*(83.9)*	*74.2411*
End Term				15.7	37.2 *	46.0 **
				(23.0)	*(21.0)*	*(21.1)*
_cons	132.5 ***	216.7 ***	233.2 ***	121.9 ***	209.2 ***	226.9 ***
	(33.5)	*(59.1)*	*(57.8)*	*(39.4)*	*(58.1)*	*(55.7)*
N	62	62	62	62	62	62
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000
R-squared	0.66	0.67	0.68	0.66	0.69	0.70

Note: For each coefficient, the table shows the estimated value and robust standard errors (in parenthesis, below). ** p < 0.1 ; ** p < 0.05; *** p < 0.01*.

[a] All specifications include three lagged observations of the growth of GDP.

[b] Length is highly collinear with pro-Labor Court, post-Peron and dictator in the cohesive representation of legislative parties, and was dropped from the analysis.

3.4 Conclusion

We started this paper pointing to the scant empirical support for models of legislative lobbying. We provide here a framework that reconciles the theoretical literature of lobbying with the negative available evidence. The first contribution of the paper is then to show that the empirical work has been looking at the wrong impact of lobbying on policy. Rather than affecting policy by impacting on the nature of legislation, lobbying may be affecting policy via judicial decisions. Thus, judicial lobbying.

Since interest groups cannot directly lobby justices, however, the link between lobbying and court rulings can only be indirect: lobbying influences court rulings by affecting the political constraints faced by the court. Identifying this mechanism allows us to reconsider the determinants and effectiveness of lobbying in separation-of-powers systems. We show that a key factor in determining lobbying is the extent by which the information so generated can sway decisive majorities in the legislature to tighten the political constraints faced by an anti-interest group court, or relax the constraints faced by a pro-interest group court.

Our empirical results for the interactions among unions, courts, and the legislature in Argentina are consistent with this description. Argentine courts tend to side more with unions the more the unions strike. Unions, in turn, strike more when courts face a more unified legislature. It is in these situations that unions' lobbying makes the legislature more pro-labor, triggering, then, more pro-union judicial decisions. Our paper, then, suggests that analyses of lobbying should pay closer attention to the actual nature of the policy making process, and in particular, to the interaction of the bureaucracy, the courts and the legislature.

3.5 Appendix

Definition (Ramey 1996). *Fix a sequential equilibrium Γ, and denote the payoff in Γ of a type-θ union by U(θ). Fix an off-the-equilibrium-path action a by the union; i.e., a ∉ γ([0,1]), and suppose there is a nonempty set X' ⊂ X such that: for all θ ∉ X' there exists θ'∈X' such that U(a,x,θ) ≥ U(θ) implies U(a,x,θ') > U(θ'). Then the equilibrium is said to violate criterion D1 unless it is the case that the support of F(θ|a) is included in X'. A sequential equilibrium is a D1 equilibrium if it does not violate criterion D1 for any a ∉ γ([0,1]).*

Lemma 3.1. *Coupled with beliefs satisfying Bayes' rule, the following strategies constitute a sequential equilibrium: (i) court's strategy $x_c(a)$ is defined by $x_c(a) = x_c^{PI}(\gamma^{-1}(a))$ for all a such that $\gamma^{-1}(a) \in K$, and $x_c(\gamma^0(\theta_0)) = z_c$, where $x_c^{PI}(\cdot)$, θ_0 and θ_1 are given in proposition 1; and (ii) union's strategy $\gamma(\cdot)$ is defined by:*

$$\gamma(\theta) = \begin{cases} \Lambda_H \ln\left(\dfrac{k}{k-\theta}\right) + h^2\theta \equiv \gamma^0(\theta) & \text{if} \quad 0 \le \theta \le \theta_0 \\ \gamma^0(\theta_0) & \text{if} \quad \theta_0 \le \theta \le \theta_1 \\ \gamma^0(\theta_0) + \Lambda_L \ln\left(\dfrac{k-\theta_1}{k-\theta}\right) + h^2(\theta-\theta_1) \equiv \gamma^1(\theta) & \text{if} \quad \theta_1 \le \theta \le 1 \end{cases}$$

where $\Lambda_s \equiv \left[h(1-\beta_s) - h^2 k\right]$ *for s=H,L.*

Proof of Lemma 3.1. First note that if beliefs satisfy Bayes' rule, then *(i)* for all a such that $\gamma^{-1}(a) \in K$, $f(\theta|a)=1$ *if* $\theta=\gamma^{-1}(a)$, and $f(\theta|a)=0$ *if* $\theta \neq \gamma^{-1}(a)$, and *(ii)* for $a=\gamma^{0}(\theta_0)$, $f(\theta|a)=\frac{f(\theta)}{[F(\theta_1)-F(\theta_0)]}$ *if* $\theta \in [\theta_0,\theta_1]$, and $f(\theta|a)=0$ otherwise. Hence it follows directly from proposition 1 that the court's proposed strategy specifies is a best response given these beliefs.

It remains to show the optimality of union's strategy given $f(\,|a)$ and $x_c(\,)$. To do so it is enough – by the revelation principle – to consider direct mechanisms in which every type has the incentive to make truthful announcements.

Suppose first that $\theta_0>0$. Our initial step is to show that if the restriction of the union strategy to $[0,\theta_0]$ is given by $\gamma^{0}(\theta)$, as defined above, then a union of type $\theta \leq \theta_0$ does not have the incentive to misrepresent its type by claiming that its type is $\theta' \in [0,\theta_0]$, $\theta' \neq \theta$. To see this, consider an arbitrary strategy $\tilde{\gamma}(\theta)$ and its restriction to $[0,\theta_0]$. Truth telling is then optimal for θ in this range only if:

$$\theta=\arg\max_{\hat{\theta}\in[0,\theta_0]} U(\hat{\theta},\theta)\equiv u_u\left(z_L(\hat{\theta};\beta_H)\right)-C\left(\tilde{\gamma}(\hat{\theta}),\theta\right)=\left\{-\frac{1}{2}\left(1-\beta_H-h\hat{\theta}\right)^2-\tilde{\gamma}(\hat{\theta})(k-\theta)\right\}$$

Note that the FOC for a maximum at θ can be written as:

$$\frac{\partial\tilde{\gamma}(\theta)}{\partial\hat{\theta}}=\left[\frac{\partial u_u(z_L(\theta;\beta_H))/\partial x}{\partial C(\tilde{\gamma}(\theta),\theta)/\partial a}\right]\frac{\partial z_L(\theta;\beta_H)}{\partial\hat{\theta}}=\frac{[1-\beta_H-h\theta]h}{k-\theta}$$

From this it follows immediately that $\tilde{\gamma}(\theta)$ is strictly increasing in θ in $[0,\theta_0]$ (the second order condition, assuring that $\tilde{\gamma}(\theta)$ is incentive compatible across $[0,\theta_0]$, follows from the assumption that $C_{a\theta}(a,\theta)<0$. See Fudenberg and Tirole 1998, 262). Moreover, for the functional forms specified, we can obtain:

$$\tilde{\gamma}(\theta)=\int_0^{\theta}\frac{h(1-\beta_H)-h^2 s}{k-s}ds=\left[h(1-\beta_H)-h^2 k\right]\ln\left(\frac{k}{k-\theta}\right)+h^2\theta=\gamma^0(\theta)$$

Note that we have made use of the fact that $\gamma(0) = 0$. For suppose not; that is, suppose $\gamma(0)=\underline{a} > 0$, and consider a deviation by type $\theta=0$ to action $a = 0$. Equilibrium policy following the observation of lobbying level $\underline{a} = min\ \gamma([0,1])$ results in the complete information policy corresponding to the lower type in the distribution; i.e., $x_c(\underline{a}) = x_c(\theta=0)$. But after a deviation, uninformed agents will respond with strategies that are optimal given some beliefs with support in $[0,1]$. Then policy following a deviation cannot possibly be worst for the union than equilibrium policy. Hence, the deviation is profitable for type 0, since it reduces costs but can't adversely affect outcomes.

An identical argument shows that if $\theta_1 < 1$, a θ-type union, $\theta \geq \theta_1$, does not have an incentive to play $\gamma^1(\theta'')$ for $\theta''\neq\theta,\ \theta''\in[\theta_1,1]$. Furthermore, it follows from the previous argument that a type $\theta < \theta_0$ does not have an incentive to play $\gamma^P = \gamma^0(\theta_0)$; i.e., every type $\theta \in [0,\theta_0)$ prefers

$(\gamma^0(\theta), z_L(\theta;\beta_H))$ to (γ^P, z_c). Similarly, when $\theta_1 \in (0,1)$, there is no type $\theta > \theta_1$ with an incentive to play $\gamma^P = \gamma^1(\theta_1)$. We continue by showing that when $0 < \theta_0 < \theta_1 < 1$, no type in $\theta \in [0, \theta_0]$ has an incentive to play $\gamma(\theta')$ for $\theta' \in [\theta_1, 1]$ (and the opposite). That is, we want to show that $u(z_L(\theta;\beta_H)) - C(\gamma^0(\theta), \theta) \geq u(z_L(\theta';\beta_L)) - C(\gamma^1(\theta'), \theta)$ for $\theta \leq \theta_0$, $\theta' \geq \theta_1$. Since $\theta \leq \theta_0$ prefers $(\gamma^0(\theta), z_L(\theta;\beta_H))$ to $(\gamma^P, z_c) = (\gamma^1(\theta_1), z_L(\theta_1;\beta_L))$, we have, for $\theta \leq \theta_0$:

$$u_u(z_L(\theta;\beta_H)) - C(\gamma^0(\theta), \theta) \geq u(z_L(\theta_1;\beta_L)) - C(\gamma^1(\theta_1), \theta) \tag{3.1}$$

Also, we know that $\theta'' \geq \theta_1$ prefers $(\gamma^1(\theta''), z_L(\theta'';\beta_L))$ to $(\gamma^1(\theta'), z_L(\theta';\beta_L))$ for $\theta' \geq \theta_1$, $\theta'' \neq \theta'$, $\theta'' \geq \theta_1$. In particular, with $\theta'' = \theta_1$, this implies, for $\theta' > \theta_1$:

$$u(z_L(\theta_1;\beta_L)) - C(\gamma^1(\theta_1), \theta_1) \geq u(z_L(\theta';\beta_L)) - C(\gamma^1(\theta'), \theta_1) \tag{3.2}$$

Now by (3.2), for $\theta \leq \theta_1$,

$$u(z_L(\theta';\beta_L)) - u(z_L(\theta_1;\beta_L) \leq \int_{\gamma^1(\theta_1)}^{\gamma^1(\theta')} \frac{\partial C(a,\theta_1)da}{\partial a} \leq \int_{\gamma^1(\theta_1)}^{\gamma^1(\theta')} \frac{\partial C(a,\theta)da}{\partial a}$$

so that for $\theta \leq \theta_1 \leq \theta'$,

$$u(z_L(\theta';\beta_L)) - C(\gamma^1(\theta'), \theta) \leq u(z_L(\theta_1;\beta_L)) - C(\gamma^1(\theta_1), \theta) \tag{3.3}$$

The result then follows from (3.1) and (3.3). In addition, (3.3) also shows that any type in the pool $[\theta_0, \theta_1]$ prefers the pool than to announce $\theta' \geq \theta_1$. A similar argument establishes that when $0 < \theta_0 < \theta_1 < 1$, no type $\theta \in [\theta_1, 1]$ has an incentive to play $\gamma(\theta')$ for $\theta' \in [0, \theta_0]$, and that no type in the pool prefers to announce $\theta' \leq \theta_0$. Finally, it is easy to see that γ can have no discontinuities at $\gamma^0(\theta_0)$, for in this case there would exist $\theta < \theta_0$

sufficiently close to θ_0 for which a deviation by θ_0 would be profitable (involving a marginal loss in policy, but a discrete reduction in lobbying costs). Similarly, it can be shown that when $\theta_1<1$, $\gamma^1(\theta_1)=\gamma^0(\theta_0)$ when $\theta_0>0$. That $\gamma^1(\theta_1)=0$ if $\theta_0=0$, as we argued above, is covered in the claim that $\gamma(0)=0$.

Proof of Proposition 3.2. That there exists an equilibrium where *(i)* and *(ii)* hold follow immediately from Lemma 3.1. It remains to show that this is indeed the unique equilibrium satisfying criterion D1. So let $\tilde{\Pi} \equiv \left(\tilde{\gamma}, \tilde{x}_c, \tilde{f}(\cdot \mid a)\right)$ be an equilibrium satisfying criterion D1. We will show that if $\theta_0>0$, then $\tilde{\gamma}(\theta) = \gamma^0(\theta) \quad \forall \theta \in [0, \theta_0]$. The same argument can then be applied to show that if $\theta_1<1$, then $\tilde{\gamma}(\theta) = \gamma^1(\theta) \quad \forall \theta \in [\theta_1, 1]$.

From the proof of lemma 3.1, we only need to show that $\tilde{\gamma}(\theta)$ is strictly increasing in $[0, \theta_0]$. So suppose that this is not the case. That is, for $a>0$, let $\tilde{\Gamma}^{-1}(a)$ denote the inverse image set of a under $\tilde{\gamma}$, and suppose that there exists an $a^P>0$ such that $\tilde{X}_0^P \equiv \left\{\theta \in \tilde{\Gamma}^{-1}\left(a^P\right): 0 \le \theta \le \theta_0\right\}$ is not a singleton. Since $\tilde{\gamma}$ must be monotonically (weakly) increasing, $\tilde{X}_0^P$ must then be an interval $[\underline{\theta}, \bar{\theta}] \subseteq [0, \theta_0]$. Let $x_L\left(\tilde{f}(\cdot \mid a); \beta_L\right)$, and $x_L\left(\tilde{f}(\cdot \mid a); \beta_H\right)$ denote the preferred policies of the critical legislators β_L and β_H given beliefs $\tilde{f}(\cdot \mid a)$. As in the case with complete information, we can now show that the set of stable policies is given by $S_{\tilde{f}(\cdot \mid a)} = \left(x_L\left(\tilde{f}(\cdot \mid a); \beta_L\right), x_L\left(\tilde{f}(\cdot \mid a); \beta_H\right)\right) \equiv (\underline{s}(a), \bar{s}(a))$. But

if $\tilde{X}_0^P = [\underline{\theta}, \bar{\theta}] \subseteq [0, \theta_0]$, then Bayes' rule and the full support assumption imply that $\tilde{f}(\theta \mid a^P) > 0$ for every $\theta \in [\underline{\theta}, \bar{\theta}]$ and $\tilde{f}(\theta \mid a^P) = 0$ otherwise. This in turn implies that $z_L(\underline{\theta}; \beta_H) < \bar{s}(a^P) < z_L(\bar{\theta}; \beta_H)$. And since $\bar{\theta} \leq \theta_0 = (z_c - \beta_H)/h$, then $z_L(\bar{\theta}; \beta_H) < z_c$. Thus the constraint is binding for the court, and $\tilde{x}_c(a^P) = \bar{s}(a^P)$. Next, choose $\theta < \bar{\theta}$ sufficiently close to $\bar{\theta}$ so that $\bar{s}(a^P) < z_L(\theta; \beta_H)$. Since by assumption $C_{a\theta} < 0$, the slope of a union's indifference curve in the (a,x) space is decreasing in the type θ, and we can always find a pair (a^*, x_c^*) such that $U(a^*, x_c^*, \theta) > U(a^P, \bar{s}(a^P), \theta)$ (1), and for any $\theta' < \theta$ $U(a^*, x_c^*, \tilde{\theta}) < U(a^P, \bar{s}(a^P), \tilde{\theta}) \forall \tilde{\theta} \leq \theta'$ (2). Furthermore, we can as well find one such pair for $x_c^* < z_L(\theta; \beta_H)$. Suppose first that $a \in range(\tilde{\gamma})$. Since $\tilde{\gamma}$ is an equilibrium, this implies that $\tilde{x}_c(a^*) < x_c^*$ (IC for θ). But then (2) implies that $\tilde{\gamma}(\tilde{\theta}) \neq a^* \forall \tilde{\theta} \leq \theta$. Then $\text{supp}\{\tilde{f}(\cdot \mid a^*)\} \subset [\theta, \bar{\theta}]$ and hence $\tilde{x}_c(a^*) \geq z_L(\theta; \beta_H)$, which is a contradiction. Now suppose instead that $a \notin range(\tilde{\gamma})$. Then if $U(a^*, x_c, \tilde{\theta}) \geq U(a^P, \bar{s}(a^P), \tilde{\theta})$ for $\tilde{\theta} \leq \theta$, (2) implies that $x_c > x_c^*$, so that, by (1), $U(a^*, x_c, \theta) > U(a^P, \bar{s}(a^P), \theta)$. Thus criterion D1 requires $\text{supp}\{\tilde{f}(\theta \mid a^*)\} \subseteq [\theta, \bar{\theta}]$. But in this case type $\bar{\theta}$ has an incentive to deviate from the proposed equilibrium behavior.

Q.E.D.

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