

PARTY STRENGTH, THE PERSONAL VOTE, AND GOVERNMENT SPENDING*

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Abstract

“Strong” political parties within legislatures are often thought to be one solution to the problem of inefficient universalism, a norm under which all legislators seek large projects for their districts that are paid for out of a common pool. We use a noncooperative framework to demonstrate that even if parties have no role in the legislature, their role in elections can be sufficient to reduce the demand for pork-barrel spending and, in the process, reduce total spending. Specifically, we argue that if parties in the electorate are strong, then legislators will demand less pork because of a decreased incentive to secure the “personal vote” via inefficient pork-barrel spending. In a model with both public goods and local distributive goods (pork), we show that legislators in strong party environments will demand less pork and more public goods, leading to lower and more efficient spending in total. We then estimate that spending in states with strong party organizations is at least four percent smaller than in states where parties are weak. In addition, we find some evidence that states with strong party organizations receive less federal aid than states with weak organizations, and we theorize that this is because members of Congress from strong party states feel less compelled to bring home aid than members from weak party states.

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1. Introduction

Numerous scholars have argued in favor of “strong” or “responsible” parties (e.g., Wilson 1885; Schattschneider 1942; American Political Science Association 1950; Ranney 1962; Fiorina 1980).¹ One rationale for strong parties relates to government spending. In a decentralized legislature, legislators have a natural tendency to engage in wasteful distributive politics, passing budgets that are too large and full of oversized projects. They do this because they face a common pool problem. If spending is targetable and taxes are broad-based, then each legislator receives a large benefit from spending directed towards his or her district but does not incur the full costs, leading to “inefficient universalism.” This argument has its roots in the work of Weingast, Shepsle and Johnsen (1981).

One way to solve this problem is to have strong leadership within the legislative process. This leadership might come from the executive branch in presidential systems (Inman and Fitts 1990; Fitts and Inman 1992; Chari, Jones and Marimon 1997; Persson and Tabellini 1999; Jones, Sanguinetti and Tommasi 2000). Elected executives internalize most external costs because their constituency is, approximately, the entire population. Leadership might also come from inside the legislature, in the form of party organizations (Downs 1957; Cox and McCubbins 1993). A party will at least internalize the external costs borne by its membership, and it may also suppress spending on items that mainly benefit non-members. The majority party typically has a total constituency of more than half of the population, so a large proportion of total project costs will be internalized. Further, strong parties may have other positive influences on fiscal policy, such as addressing the temptation of legislators to overspend today and place the tax burden on future generations (Crain and Tollison 1993) and checking the temptations of term-limited officials to shirk in their last period in office (Besley and Case 1995; Herron and Shotts 2006).² Following Downs (1957) and others, Cox and McCubbins (1993) argue that parties invest in “brand names.” One important characteristic that parties desire in their brand is a reputation for fiscal responsibility, giving party leaders an incentive to internalize the costs of distributive projects.³

Ashworth and de Mesquita (2006, 169) point out that this argument does not appear

to fit all of the facts: “the last several decades have seen an *increase* in party cohesion in Congressional voting...and party organizations have become *more* assertive in policymaking... In light of the party-based models, it is surprising, then, that House members actually do *more* constituency service today than they did 40 years ago...” Our paper offers an explanation that focuses on parties but emphasizes their behavior in elections. Here parties – especially state and local party organizations – have become *weaker* over time, and our model offers one possible explanation for why this leads to greater constituency service (and pork provision).

Strong party organizations in the electoral process are an equally important, but heretofore under-theorized, mechanism for constraining inefficient distributive spending, or “pork.” In this paper, we focus on how parties may influence budgetary bargaining via the electoral process by inducing changes in legislator preferences for distributive spending and public goods. Rather than influencing the legislative process, parties may simply change legislators’ preferences. Specifically, when parties in the electorate are strong, legislators have less need to engage in particularistic spending because party organizations provide them with assistance in running for office.⁴ To our knowledge, there is no model that simultaneously examines how the nature of elections shapes the preferences of legislators, and in turn, shapes the composition and *size* of spending.⁵

Using a variant on a Baron and Ferejohn (1989) bargaining model as well as the framework of Weingast, Shepsle and Johnsen (1981), we show that by reducing the demand for pork-barrel projects, strong parties in the electorate can lead to lower spending in legislatures.⁶ This result does not rely on the ability of parties to affect the legislative process. Thus, the “strong parties” in our model may be quite weak inside the legislature.

The logic is simple and follows from basic microeconomic principles: Suppose the benefits to good 1 (a distributive project benefitting a specific district) fall, the benefits to good 2 (a public good benefitting all citizens) stay fixed, and the costs of total spending on both goods (taxes, including deadweight costs) stay fixed. Then each legislator’s preference for spending on good 1 falls, her preference for spending on good 2 rises, and her preference for

total spending on both goods falls. This last result follows because the overall benefits of the composite good consisting of both types of spending (appropriately weighted) fall, while the costs of taxation do not. This is true for *all* legislators. So, assuming the legislative process respects unanimous changes in preferences, total spending will fall, as will spending on good 1. The only case in which spending does not fall is when the equilibrium produces a corner solution, with zero initial spending on good 1. In that case, spending does not change.

This simple insight enables us to generate three important results. First, distributive politics spending is declining in party organizational strength. Second, public goods spending is increasing in party organizational strength. Third, overall spending is declining in party organizational strength. This result holds for any q -rule, including the case of unanimous (universal) coalitions, and offers an explanation for how strong parties in the electorate can lead to lower spending even in a universalistic world. This model is strengthened even further if we assume that party reputation is improved by more efficient spending. The results obtain in both a bargaining setting as well as a setting without collective choice.

Empirically, we focus in this paper on the U.S. states. Our starting point is Mayhew (1986), who provides evidence that well-organized parties constrain spending. In particular, he finds a strong, negative relationship between state government spending (as a fraction of total state income) and the existence of “traditional party organizations” (TPOs) across states. He offers five possible explanations for this correlation, all different from the argument above. Our paper, which examines state spending and federal aid data for fiscal years 1957-2000, establishes that the negative relationship between party strength and government spending even holds within states over time. When party strength declines, spending in a state increases by four to nine percent. We also find evidence that states with strong parties receive less federal aid than states with weak parties, though this result is not as robust as our finding for spending. We theorize that this weaker relationship results because members of Congress receive a smaller return on aid when parties are strong because they need fewer electoral resources.

2. Parties and the Personal Vote

We can distinguish between electoral environments where the “personal vote” is important and those where party labels dominate. As Cain, Ferejohn and Fiorina (1987) write, “A representative highly sensitive to local concerns can be locally responsible and nationally irresponsible. Pork barrel projects are the classic example...[T]he parochial pressures institutionalized in single-member districts must be offset or overridden by some formal or informal mechanisms. Examples of formal mechanisms include cabinet governments and restrictions on private member bills. An example of an informal mechanism is a strong party system.” Nielson (2002, 11) puts the intuition this way: “This brings us to policymakers’ incentives, which political institutions shape. The personal vote, where politicians pursue votes based on their individual popularity that they heighten through promises of pork and patronage, makes politicians beholden to narrow constituencies and relatively indifferent to national policy goals. The personal vote thus undermines public-goods production. On the other hand, votes aggregated at the level of the party have a greater chance of motivating politicians to pursue nationally oriented public-goods policies. Party leaders, charged with attending to the collective electoral prospects of their rank-and-file members, have a much greater stake in national policy outcomes, including the provision of public goods. In party-centered systems they can discipline back-benchers in a joint pursuit of collective welfare.”

This idea also finds its way into the substantive literature. Chhibber and Nooruddin (2004) find that Indian states with multiple parties provide more club goods, while two-party states tend to provide public goods. Keefer and Khemani (2008) use data from constituency development funds in India to show that legislators in party strongholds are less likely to secure pork for their constituents. Ames (1995, 430-431) writes that Brazil’s open-list PR system and weak party system “hinders voter control” and “forces candidates to seek single-issue niches, to spend lavishly...Brazil’s electoral system motivates deputies to seek pork.” Given this, Ames writes, “Pork and patronage particularize policy-making. Politicians sustain themselves not by promoting local prosperity and providing public goods but by supplying pork and services to individuals” (Ames 2001, 24). Samuels (2002) interprets the

Brazilian case differently, arguing that pork helps legislators secure financing for campaigns. Hallerberg and Marier (2004) find that executive budgetary authority has a dampening effect on spending in Latin American and Caribbean countries when incentives to cultivate the personal vote are higher.

Japan provides further evidence of this tendency. McCubbins and Rosenbluth note that Japanese politics was particularistic and personalized prior to the switch from an SNTV system to single-member districts in 1994. The SNTV provided strong incentives for personal vote politics. Elections were candidate-centered and gave parties an incentive to assist candidates in securing the personal vote. Parties, therefore, tended to divide up authority among different candidates, allowing them to offer services without competing with one another. “Instead of fighting the incentives within SNTV for the personal vote, a majority-seeking party would be better off controlling the creation and maintenance of members’ personal vote coalitions so as to make the vote division induced by personal vote incentives more efficient” (McCubbins and Rosenbluth 1995, 41).

Moving beyond studies of single countries, there is a large formal and large-n empirical literature comparing electoral systems in terms of pork provision. Using cross-national data and models often based on Weingast, Shepsle and Johnsen (1981), scholars have argued that greater party fragmentation leads to greater spending (Bawn and Rosenbluth 2006; Persson, Roland and Tabellini 2005; Persson and Tabellini 2004; Perotti and Kontopoulos 2002; Scartascini and Crain 2002), though there are some results to the contrary (e.g., Lledo 2003). One intuition is that greater party fragmentation leads to a diffusion of responsibility, and hence a greater propensity to overspend. A corollary is that governments elected through proportional representation will spend more than their majoritarian counterparts due to greater party fragmentation, though some scholars have suggested other aspects of PR systems may push spending down (e.g., Persson and Tabellini 1999, 2000).

In addition, Lizzeri and Persico (2001) have shown that winner-take-all systems tend to provide transfers (i.e., pork) instead of (national) public goods, with the opposite being true in PR systems. However, within a PR system, the propensity to provide transfers instead

of public goods is increasing in the number of parties (Lizzeri and Persico 2005). Moreover, Milesi-Ferretti, Perotti and Rostagno (2002) allow for a mix of transfers to groups and local public goods spending, and they find that majoritarian systems (modeled as multiple single-member districts) will emphasize local public goods, while PR systems (modeled as one multi-member district) will have more group transfer spending. Finally, Rodden (2005) shows that countries in which the same party has tight control of national and subnational governments tend to spend less because such party cohesion prevents subnational governments from behaving irresponsibly in anticipation of a federal bailout.

Our intent here is not to distinguish among electoral systems per se, but rather to assess what happens to the returns for securing distributive projects as part of building the personal vote, holding an electoral system fixed, when the strength of parties in the electorate changes.

3. Theory

Actors and Preferences

Let N be the total number of citizens in a state or country who are partitioned into n odd and equally-sized districts, with $m = N/n$ denoting the number of citizens in each district. There are two types of goods—a pure public good that benefits all districts, and a distributive good that benefits a single district. Let X be the total amount spent on the public good. The public good provides a benefit of $b(X)$ to each citizen, where $b' > 0$ and $b'' < 0$. Let z_i be the per capita amount spent on distributive goods in district i ; this spending only benefits the citizens of district i . Let $\mathbf{z} = (z_1, \dots, z_n)$ be the vector of per capita distributive spending, and let $Z = (N/n) \sum_{i=1}^n z_i$ be the total amount spent on distributive goods. Then the total cost of public spending is $c(X+Z)$, where $c(0)=0$, $c' > 1$, and $c'' > 0$, accounting for the deadweight costs of taxation. We also assume that $c'(0) < Nb'(0)$ (otherwise, spending on the public good is always undesirable) and that deadweight costs are not so great that legislators prefer no pork even when costs are shared across districts. Assume that all costs are divided equally among citizens.

The total payoff to the citizens in district i (and to a legislator who represents these

citizens) is:

$$U_i(X, \mathbf{z}) = \frac{1}{n} [Nz_i + Nb(X) - c(X+Z)]. \quad (1)$$

The total payoff across voters is

$$U(X, \mathbf{z}) = \sum_{i=1}^n U_i(X, \mathbf{z}) = Z + Nb(X) - c(X+Z). \quad (2)$$

This model is set up so that only public goods are produced at the social optimum. Intuitively, the presence of distributive goods increases the costs of providing the public good, leading to underprovision. Since taxation entails deadweight costs, distributive goods are always inefficient to provide in this model. Although distributive goods are not provided at a social optimum, legislators prefer a positive level of distributive spending because the costs of distributive goods are spread out across all districts. Cost-sharing makes distributive spending relatively more attractive. Because some positive level of distributive spending is optimal for the legislator and deadweight costs of taxation are present, the cost of providing the public good will increase. As in most such situations, the legislator will wish to consume less of the public good, leading her to desire a smaller-than-socially-optimal public good. These relationships are summarized as follows:⁷

Remark 1: The socially optimal division of spending is for all funds to be allocated to the public good and none to distributive projects.

Remark 2: Legislators prefer public goods that are smaller than socially optimal and distributive projects for their district that are larger than socially optimal.

Capturing Party Strength

Now, let $\alpha \geq 1$ denote a legislator's relative preference for distributive versus public goods; a higher value of α indicates that the legislator weights distributive goods more heavily in his or her utility. The value of α is determined by several different factors, one of which is the degree to which politics is personalistic rather than party-oriented.⁸ To the extent that political parties have weak organizations, and campaigning and elections are

candidate-centered, α will be higher. Candidates who cannot rely on parties will value pork more highly because it provides a way to secure the personal vote directly (e.g., Ames 2001) or indirectly via increased campaign contributions (e.g., Samuels 2002). Under these circumstances legislators put more weight on distributive spending that flows to their districts. If political parties have strong organizations and are important sources of campaign resources for candidates, legislators will put less weight on distributive spending, leading to lower values of α .⁹

The mechanism by which strong parties alter α can be understood by considering an electoral production function f which translates distributive goods (z_i), support from the party benefitting all candidates (r), candidate-specific support from the party (r_i), and other inputs such as candidates' campaign spending and policy positions into an election outcome. Assuming that $\frac{\partial f}{\partial z_i \partial r} < 0$ and $\frac{\partial f}{\partial z_i \partial r_i} < 0$, then a decline in party support will increase the value of distributive goods – i.e., increase α . (Support here need not be financial; it also includes the value of the party “brand,” voter mobilization, and other activities of the parties that benefit a candidate.) Of course, the strength of an *opponent's* political party may cause a legislator to demand more pork to fend off a challenger with strong party support. However, this effect is unlikely to be very large, since legislators are unlikely to be able to alter levels of pork very quickly in the presence of a strong challenger. Moreover, the incumbent's party is likely to devote considerable resources to close races, and a party can more easily reallocate resources than a legislator can redirect pork. What about intra-party competition? Primary contests (intra-party competition) reinforce our theory. If party organizations are strong, then one thing they can do is prevent primary challengers from emerging. If parties are weak, then incumbents will need to rely more on pork to fend off primary challengers. Our analysis, therefore, applies to situations where one party dominates the landscape (as in the South during much of the 20th century) but lacks strong party organizations, leading to a fair amount of primary competition.

The idea that redistribution and/or pork are traded-off against other electoral resources is well-established in the theoretical literature on elections. For instance, a series of models

studying the targeting of redistribution to swing voters or partisan voters emphasizes the tradeoff between pork and policy in influencing voters (e.g., Cox and McCubbins 1986; Lindbeck and Weibull 1987; Dixit and Londregan 1995). Others, like McGillivray (2004) and Golden and Picci (2008), argue that the strength of parties will influence whether close seats or safe seats are targeted for redistribution in single-member-districts, with strong parties targeting redistribution to marginal seats; we do not model this here.¹⁰ Of course, many other factors go into the determination of α .¹¹ We are interested in how changes in party strength influence α and, in turn, equilibrium behavior. All that we require for α and party strength to be related is that pork and party organization are both electoral resources and that pork can serve as a substitute for the electoral benefits of a strong party organization. If pork-barrel spending confers direct electoral benefits on legislators in the form of vote share, then as parties get weaker (party support declines), the benefits from pork will be more valuable to legislators, all else equal. (This is certainly a reasonable assumption. Levitt and Snyder (1997), Stein and Bickers (1994), Alvarez and Saving (1997), and others have shown that federal spending and projects benefit incumbents.) As a result, the value of a given dollar of pork spending, relative to public goods spending, increases. This is captured by a higher α . Whether this effect is large or small is an empirical matter.

Let \mathbf{z}_{-i} denote the vector of per capita distributive spending in all districts other than district i , and let $Z_{-i} = (N/n) \sum_{j \neq i} z_j$ be total distributive spending in all districts other than i . The payoff to legislator i is

$$V_i(X, z_i; Z_{-i}) = \frac{1}{n} [\alpha N z_i + Nb(X) - c(X + Z)] \quad (3)$$

This is similar to (1) above, but with the weight α placed on distributive spending.

As a thought experiment, suppose that each legislator could unilaterally select the project for his or her district. Now consider the action of one legislator who does the same and also selects the size of the public good. This “universalistic” setup is similar to that in Weingast, Shepsle and Johnsen (1981), except with the addition of a public good and a weight on distributive spending. As legislators weight distributive projects more heavily, they will

naturally demand more of them and, in turn, demand less of the public good. The net effect is to increase total spending because, overall, the benefit of the combined public and distributive good has increased, while the costs of taxation have remain unchanged. Conversely, as distributive goods are deemphasized, spending will decline, for the same reasons. This result establishes an alternative explanation for why strong parties may dampen the tendency toward overspending implied by a norm of universalism.

Remark 3: Under a norm of universalism, as party organizations in the electorate become stronger, legislators collectively will select smaller amounts of distributive projects for their districts and larger public goods benefiting all districts. The net effect of these changes is to decrease total spending.

A Legislative Bargaining Setting

It is straightforward to show that the same type of result holds in a bargaining setting. A legislature L must select a vector consisting of a public good X and a vector of distributive projects z , defined above. The game is an infinite-horizon bargaining model with the following structure, similar to that in Baron and Ferejohn (1989). The legislature operates under a q -rule, $\frac{n+1}{2} \leq q \leq n$. A randomly-chosen agenda setter proposes a public good and distributive projects as part of an omnibus bill. Bargaining proceeds under a closed rule, which means that no amendments are allowed. If the bill passes, the game ends. If it fails, a new agenda setter is chosen to make a new proposal. The game continues until a bill passes, with $0 < \delta \leq 1$ accounting for delay in bargaining. Let v be the continuation value of the game for a legislator offered a project by the agenda setter.

The equilibrium concept is subgame perfect Nash restricted to the consideration of stationary strategies, in which players must take the same actions at every node in which the game is structurally identical. This means that in every period, the same equilibrium offers will be made.

We are interested in answering three questions: (1) What are the effects of changes in party strength on public goods spending? (2) What are the effects of changes in party

strength on distributive spending? (3) What are the effects of changes in party strength on total spending?

Proposition 1. In the stationary subgame perfect Nash equilibrium of the game, total spending is decreasing in party organizational strength in the electorate, spending on public goods is increasing in party organizational strength, and spending on distributive goods is declining in party organizational strength.

The motivation for this proposition is as follows. As party strength in the electorate increases, legislators will demand less of the distributive good at any price. This has a downward effect on distributive spending. Because of the deadweight costs of taxation, this makes the public good relatively less expensive, leading legislators to demand more of the good. The net effect is to decrease spending because the impact of a change in party strength has a large, direct impact on demand by changing the benefits of these goods, while it has a smaller, indirect effect on public goods spending by reducing the deadweight costs of taxation. The agenda setter, in constructing proposals, wishes to secure a larger public good and less distributive spending, since he is able to build a coalition more cheaply in this way once the value of pork declines. Absent any conception of party strength, the public good is inefficiently small in the equilibrium, while the distributive good is inefficiently large. Party strength moves both the size of the public good and the size of distributive spending in a more efficient direction. Two additional results are worth noting.

Remark 4: As the size of the majority required for bill passage increases, spending on distributive goods decreases, spending on public goods increases, and total spending decreases.

Intuitively, as the coalition required for bill passage increases, more of the costs are internalized by the agenda setter, who has to take into account the welfare of coalition members in constructing optimal proposals. In fact, unanimity rule achieves the optimal outcome when legislators are perfectly patient. The reason is that under unanimity rule the agenda setter fully internalizes the welfare of all legislators and is therefore acting as if he

or she is the social planner. Of course, the advantages of unanimity rule for efficiency may be counteracted by other considerations, such as hold-up costs in bargaining, especially with imperfect information about preferences.

Remark 5: Changing the number of districts has no effect on total spending on distributive goods, spending on public goods, or total spending, as long as the proportion of votes required to pass a proposal (q/n) is unchanged.

This follows directly from the first order conditions of the proposer’s maximization problem. Increasing the number of districts *would* have effects if the majority threshold (q) was held fixed, but it seems more reasonable to think of q/n as fixed.¹²

In sum, whether examining individual legislator preferences, adopting a decision-theoretic approach, or using a bargaining model, party strength limits “pork barrel” spending, increases spending on worthwhile public goods projects, and decreases spending overall. We now turn to U.S. state spending and federal aid data to examine the impact of party strength empirically.

4. Application: Party Strength in the U.S. States

We focus on one of the comparative statics from section 3, studying the impact of party strength on the total size of state government spending and federal aid to the states.¹³ The analysis proceeds in two ways. One emphasizes cross-sectional variation in party strength across states. The other takes advantage of over-time variation in strength within states, using panel analysis and, as a robustness check, differences-in-differences (DD) estimation.¹⁴ The cross-sectional analysis focuses on the time period 1957-1970, and the analysis leveraging over-time variation utilizes the time period 1957-2000.¹⁵ Our specifications rely on ordinary least squares with year dummy variables. To address heteroskedasticity and autocorrelation in the data, we use clustered standard errors with clustering by state (Bertrand, Duflo and Mullainathan 2004).¹⁶

To the extent that parties are well-organized, they are better positioned to provide the sorts of electoral resources that substitute for pork-barrel projects. At the state level, this

should lead to lower government spending. At the federal level, this should lead to lower levels of aid because the members of Congress from that state can rely more on party support.¹⁷

There are many ways to measure party organizational strength. Our conception of party strength is not related to the parties' relative positions in the legislature, so straightforward measures such as seat shares will not be used except as controls. We wish to focus, instead, on measures that are related to "parties in the electorate" and "parties as organizations" rather than "parties in government" (Key 1964). We measure the capacity of parties as electoral organizations using an analysis of the historical record.

Party organizational strength within the legislature may be correlated with party organizational strength outside of the legislature. To the extent that this is the case, our measure of party electoral strength may also be tapping party legislative strength. We deal with this in two ways. First, we include measures of strong party organizations in legislatures as a control variable in some specifications, showing that the inclusion of such variables does not change the impact of party electoral strength. Second, we show that states with strong parties in the electorate tend to receive lower levels of federal aid, suggesting that members of Congress do not seek out as much aid for their states since doing so is not as important electorally if parties provide resources. By focusing on decisions made within Congress, we are able to hold party strength in the legislature constant with year fixed effects.¹⁸ Combined, these checks support the claim that the measure of party electoral strength is tapping the impact of electoral, and not internal legislative, party strength.

Measure of Party Strength

The variable *Party Organization* is based on a comprehensive study by Mayhew. As Mayhew (1986, 330) writes, "The 1950s and 1960s were a golden age of sorts for American local organizations...All these forms of [party] structure fared very badly in the 1970s, largely losing out to candidate organizations that introduced capital-intensive campaigns..." Mayhew classified thirteen states as having very strong party organizations during this time period based on his reading of the historical literature. He defined "traditional party organizations"

(TPOs) as autonomous, enduring, and hierarchical. Further, they actively bring about the nomination of candidates for a wide range of public offices, and they rely on material (as opposed to purposive) incentives to accomplish organization work (Mayhew 1986, 19-20).¹⁹ *Party Organization* = 1 for states with TPO scores of 4 or 5 (CT, DE, IL, IN, KY, MD, MO, NJ, NY, OH, PA, RI, WV), and *Party Organization* = 0 otherwise. In the analysis for 1957-2000, we set *Party Organization* = 0 for all years after 1970, in keeping with Mayhew's analysis that electoral party organizations in the states essentially collapsed post-1970.²⁰ In section 5, we present evidence justifying this approach. Endogeneity of party strength is not a concern here because the decline of parties is largely orthogonal to fiscal decision making.

Dependent Variables

The unit of analysis is the state. We use data for 46 states. Alaska and Hawaii were not yet states for some of the years in the dataset, Nebraska has a nonpartisan unicameral legislature, and Minnesota had a nonpartisan legislature for a large fraction of the time period under study.

In the analysis of federal aid, the dependent variable is the log of total real federal aid per capita in 1970 dollars, adjusted using consumer price index (CPI) deflators (*Ln Fed Aid Per Capita (State+Local)*). In the state spending analysis, the dependent variable is the log of total real state plus local general expenditures per capita in 1970 dollars, adjusted using CPI deflators (*Ln State Spending Per Capita (State + Local)*). As a robustness check, we also use state-level-only spending in our analysis (*Ln State Spending Per Capita (State-Only)*). We have also run this analysis using levels of instead of logs of financial variables; we indicate in the results section whenever the results are affected by using alternative measures.

Other Independent Variables

We also include standard control variables in the analysis. These include income (*Ln Income Per Capita*), population (*Ln Population*), population density (*Ln Density*), percent elderly (*Elderly*), percent school-age (*Schoolage*), the share of state legislative seats held by Democrats (*Dem Leg Seat Share*)²¹, the average Democratic vote share in the state over

the past 10 years (*Avg Dem Vote Share*), presence of divided government (*Divided Govt*), a dummy for southern states (*South*), the number of seats in each state legislative chamber divided by 100 (*Upper House Seats* and *Lower House Seats*) (Gilligan and Matsusaka 1995, 2001), and a dummy indicating whether a state has the direct initiative (*Initiative*) (Matsusaka 1995).²² In the specifications with state spending as a dependent variable, federal aid (*Ln Fed Aid Per Capita (State + Local)*) is also included as a control. We drop this variable from some specifications as a robustness check.

In some specifications we also include a measure of party organizational strength within the legislature for the 1950s and 1960s (*Legislative Party Strength*). During part of this time period, Zeller (1954) conducted a survey of experts in state politics and constructed a measure of party cohesion in the legislature. We use this measure for the time period from 1957-1970, coding it 1 if Zeller identified the state as having strong parties, and 0 otherwise. (We do not have a reliable measure of party organizational strength after 1970, so we only use the Zeller measure in the pre-1970 period.) Seventeen states have strong parties in the legislature. Of the 46 states in our sample, 10 states are categorized differently by Mayhew and Zeller.

State spending, population, and income data are from the U.S. Bureau of the Census, Government Finances and State Government Finances databases. Other demographic variables (e.g, percent elderly, percent school-age) are from the decennial census and imputed for years between censuses. Data on the distribution of legislative seats, chamber sizes, and convention rules is from Burnham (1985) and *The Book of the States* (various years). Data on citizen initiatives is from the Initiative and Referendum Institute. Table 1 contains summary statistics for all variables. The election data used in the analysis is taken from a large number of sources – secretary of state reports, state manuals and blue books, and in some cases newspapers (see Ansolabehere and Snyder 2002 for details).

5. Evidence on the Decline of Party Organizational Strength

Mayhew (1986) argues that most, if not all, strong party organizations declined sharply

by the mid-1970s. There is other evidence consistent with Mayhew’s claim. First, split-ticket voting increased markedly during the 1960s and 1970s, and on into the 1980s. Even more interestingly, split-ticket voting increased noticeably more in the states that had strong party organizations compared to other states. An examination of aggregate electoral data and the American National Election Studies (ANES) confirms this.

For the ANES analysis, we examined respondents’ vote choices for president, governor, U.S. senator, and U.S. House representative. We define a “split ticket” as a case where a respondent reported voting for a Democrat for at least one of these offices and Republican for at least one of these offices in the same year. The variable is zero for all respondents who reported voting for at least two of these offices (and therefore could have split their ticket) and either reported voting only for Democrats or only for Republicans.

For the aggregate voting analysis, we use state level data on all statewide office up and down the ballot – president, governor, U.S. senator, as well as down-ballot offices such as lieutenant governor, attorney general, state treasurer, secretary of state, and state auditor. We define the average level of “ticket splitting” as the standard deviation of democratic vote share across all available offices in a given state in a given year.²³

The results are shown in Table 2. Regardless of the measure used, the estimated amount of split-ticket voting is higher in the post-1970 period than in the pre-1970 period. But the growth in split-ticket voting is much more impressive in the states defined as having strong party organizations pre-1970. In these states the fraction of split-tickets rose from 20% to almost 34%, and the standard deviation measure grew from .026 to .073. In the states defined as having weak parties in both periods, the growth was more modest: a split-ticketing increase from 26% to 30%, and a standard deviation increase from .050 to .079. Also, in the pre-1970 period the gap split-ticket voting was quite large and in the expected direction, with significantly lower levels of split-ticket voting observed in states with strong party organizations. For the standard deviation measure, the average gap between the groups closed in the second period, leaving a small and statistically insignificant difference. For the ANES measure the difference reversed, and the (formerly) strong-party states appear to have

higher levels of split-ticket voting in the second period.

6. Cross-Sectional Results, 1957-1970

Federal Aid Analysis

Table 3 presents the results of the federal aid analysis. We present several specifications. The first includes only year fixed effects and income. The second adds additional controls. The third adds population density. The final specification adds the Zeller measure. Table 7 presents the results of a specification with all control variables included, and full results are available from the authors upon request.

For the period 1957-1970, the estimated coefficient on *Party Organization* is significant in the simplest specifications (columns 1 and 2). The coefficient becomes statistically and substantively insignificant, however, once population density is added to the specification. Strong party organizations and machines emerged especially in urban areas in the northeastern U.S., and these areas were not as powerful politically in Washington as were rural (mostly Southern) areas for much of this time, when committee-centered politics was the norm (e.g., Rohde 1991; Shepsle 1989). For instance, in 1964 a disproportionate share (71 percent) of major committee chairs were from rural areas (Wolfinger and Heifetz 1965), and there is strong evidence that their influence directed significant federal funds, especially agriculture spending, to rural areas (McCubbins and Schwartz 1988). Another reason states with dense urban areas tend to receive less aid on a per capita basis may be related to costs. It is often cheaper to provide the same level of goods and services in urban areas than in areas with widely dispersed groups of individuals. Therefore, the same task can often be accomplished with less funding. In sum, it is difficult to disentangle the effects of party organization and population density without variation within states. We explore this further in the next section along with additional interpretations.

The coefficient on *Legislative Party Strength* is marginally significant, even with population density included.²⁴ The point estimate implies that states with strong parties in the legislature received about 11 percent less aid than states without strong parties in the legis-

lature. One reason for this effect might be that legislators in these states were spending less at the state level, and therefore were not eligible for as much federal aid, since much federal aid is explicitly or implicitly in the form of matching grants.

State Spending Analysis

The results presented in Table 4 show that TPO has a statistically and substantively significant effect on spending. Spending is about seven percent lower in states with strong party organizations during this time period. The full specification appears in Table 7.

The result is robust in the pre-1970 period to the inclusion of the Zeller measure of legislative party strength, suggesting that our measure is not just capturing what happens inside the legislature. In fact, *Legislative Party Strength* is not statistically significant in the spending analysis, whether *Party Organization* is in the specification or not. While parties in legislatures may very well act as a restraint on spending, our results show that what happens outside of the legislature is also important. These results strengthen the extant empirical work linking parties and government spending.

7. Panel Results, 1957-2000

We now consider the longer period, over which party organizations across the country have declined in strength. The results presented in Table 5 show that party organization has a negative and statistically significant effect on aid to the states. States with strong parties in the electorate receive about 22 percent less aid than states with weak parties. This result is similar to the 1957-1970 analysis when density is not included as an independent variable. The result is robust to state fixed effects, as the final column in Table 5 indicates. Table 7 provides the results for all variables.²⁵

The results in Table 6 show that states with strong party organizations spend at least four percent less than those states with weak party organizations. This negative relationship is robust to state fixed effects, as column (5) of the table shows. (Full results are available in Table 7.) When we leave federal aid out of the full analysis with state fixed effects, the

effect increases to nine percent.²⁶ These results are substantively significant, especially given that spending is often immune to rules and institutions.²⁷

8. Discussion and Conclusion

While much of the literature on parties and spending has focused on the role of parties in the legislature, we have shown how the environment *outside* the legislature, especially the electoral situation, can have a large impact on decisions made *inside* the legislature. Moreover, party organizational structure outside of the legislature may be one of the more important aspects shaping how the electoral environment affects legislator behavior. Therefore, this paper has offered a new understanding of how and why strong political parties change the preferences of legislators for pork vs. public goods.

To summarize, legislators in political parties that offer significant resources in elections receive a smaller return on pork-barrel spending, since the “personal vote” and credit-claiming are less important than in a world with weak parties. This has the direct effect of reducing the demand for pork-barrel spending and the indirect effect of increasing the demand for spending on public goods benefitting all districts. Formally, using a noncooperative bargaining framework, we have established that as party organization in the electorate strengthens, demand for local distributive goods declines. This induces more spending on public goods benefitting all districts, and the net effect is to produce lower and more efficient spending. A key comparative static matches what we observe empirically. Using data from 1957-2000, we demonstrate that U.S. states with strong parties have consistently spent less than states with weak parties. We also find some evidence that during this time period, states with strong party organizations received less in federal aid, consistent with the idea that members of Congress from strong party states felt less of a need to bring aid back home.

The formal and empirical results presented in this paper suggest directions for future work. Additional measures of party organizational strength that are comparable over time would offer an additional means of probing the hypotheses examined in this paper. In addition, new substantive questions are raised by this paper. Does stronger party organizational

structure in the electoral environment translate into greater party cohesion in legislative voting? Our current model cannot address this, but one could imagine a model in which weights on taxation and/or the benefits of public goods, influenced by party, could have such an impact. Distinguishing among these effects is a worthwhile endeavor for future analysis.

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Notes

¹Fiorina (1980, 26) makes the case clearly: “The only way collective responsibility has ever existed, and can exist given our institutions, is through the agency of the political party; in American politics, responsibility requires cohesive parties.”

²Herron and Shotts find that the impact of term limits on pork-barrel spending depends on how inefficient the projects are. Paradoxically, term limits *increase* pork barrel spending when projects are very inefficient and decrease pork when projects are less inefficient.

³Several formal models (e.g., Inman and Fitts 1990; Weingast 1979) have contrasted legislative behavior in the presence of strong parties within legislatures and/or executives versus an unconstrained setting where all legislators receive the projects they select, but we are aware of none that have done so with a noncooperative game theoretic foundation.

⁴Of course, there may be countervailing forces at work. For instance, strong parties may procure significant patronage for supporters, but this merely determines who gets jobs after the spending has been allocated. Assuming that those in patronage jobs shirk only slightly, then patronage may be a more effective way to secure votes than pork-barrel projects which are wasteful and often harder to target. In this way, patronage may be a (more efficient) substitute for pork. In addition, Mayhew suggests that patronage may lead to a less expansionary government because it will inhibit the creation of a professionalized bureaucracy. Another possibility is that party leaders will threaten to withhold resources if legislators do not deliver pork, as Jones and Hwang (2003) argue that parties do in Argentina. However, parties need to win seats, so this threat might not be credible.

⁵Grossman and Helpman (2005) model the relationship between “party discipline,” defined as being able to precommit to a platform, and total distributive spending. They find a non-monotonic relationship in the model, but they do not consider the tradeoff between public goods and distributive spending.

⁶For related models, see Volden and Wiseman (2007), Battaglini and Coate (2006), and Leblanc, Snyder and Tripathi (2000). We focus on different comparative statics. For in-

stance, Volden and Wiseman (2007) also study a model in which legislators bargain both over public goods and distributive (private) goods. They do not make the link between preference for public goods and political parties, but focus on different institutional design issues, such as closed vs. open rules. Their model differs from ours because of our different purposes. In their model, the budget is fixed and benefits in both public and private goods are linear, so Wiseman and Volden can only address the relative amounts of the two types of goods provided in equilibrium. Also, they focus on the somewhat paradoxical result that, in some ranges of the parameter space, when legislators care a lot about public goods the equilibrium allocation may shift away from public goods and towards private goods, at least in relative terms. This happens because “policy proposers can exploit coalition partners’ strong preferences for public goods to actually provide fewer public goods in equilibrium while directing more private goods to themselves” (Volden and Wiseman 2007, abstract).

⁷All remarks and the proposition are proven in the Proofs section at the end of the paper.

⁸Since $c' > 1$, if $\alpha < 1$ then the agenda setter’s optimal choice of Z is sometimes zero in the bargaining model. If $\alpha < 1/n$, then legislator i ’s preferred project size may sometimes be zero. Note, $\alpha = 1$ does not mean that the legislator treats public and distributive goods the same. This will depend on the relative benefits implied by the utility functions for X and for z_i . We can achieve the appropriate weight between distributive and public goods when parties are at their weakest by adjusting the utility functions accordingly.

⁹When α is low, legislators might also put more weight on the “public goods” component of their party’s platform. This might be the case especially in countries or electoral systems in which strong parties try to create spending programs that benefit large sectors of the country. We do not model this here. Adding it would just reinforce our conclusions.

¹⁰There is limited empirical evidence for this claim; see footnote 17.

¹¹For instance, see Ashworth and de Mesquita (2006) for an argument that increased partisan balance in the electorate leads legislators to provide more constituency service.

¹²Note also that tiny changes in q/n may automatically occur when n changes due to the fact that q and n are treated as integers in our model.

¹³We do not attempt to separate pork-barrel and public goods spending because, in practice, doing so either requires heroic assumptions or is infeasible, given how spending data is categorized. For instance, should highway spending be classified as pork (the road might not need to be built and might only benefit a tiny area) or as a public good (the road benefits all in the state by virtue of better connecting localities in the state)?

¹⁴The DD analysis compares how outcomes are influenced by an institutional change that affects only a portion of a sample; in our case, the DD analysis compares the change in spending in states that had strong parties which became weak due to a “shock” in the 1970s with states that had weak parties even before the 1970s “shock.” See Bertrand, Duflo and Mullainathan (2004) for additional background.

¹⁵The U.S. Census Bureau began estimating state and local spending annually in 1957.

¹⁶This correction is appropriate when there is uncertainty about the precise nature of the autocorrelation process (Bertrand, Duflo and Mullainathan 2004). A standard assumption about autocorrelation is that it follows an AR(1) process. As a robustness check, this assumption is used as part of a GLS estimation with panel-corrected-standard errors (Beck and Katz 1995) and year dummy variables.

¹⁷Other factors could produce a correlation between federal spending and party strength. For example, strong party organizations might be associated with higher levels of inter-party electoral competition, and federal spending might be targeted towards such “swing” states. Empirically, however, while some scholars have found evidence that federal spending is targeted to vulnerable members of Congress (e.g., Stein and Bickers 1994), others have found little evidence that federal spending is strongly targeted at swing states (e.g., Larcinese, Snyder and Testa 2006).

¹⁸Federal aid may be endogenous to state spending, though most public finance studies treat it as exogenous; adding it or leaving it out of the spending analysis does not alter our findings in meaningful ways.

¹⁹While the scores are therefore somewhat subjective, they represent a massive amount of work and the synthesis of a vast literature.

²⁰In discussing local party organizations, Mayhew (1986, 329-330) writes, “One clear conclusion is that local party organizations of several kinds have decisively declined since the 1960s in their ability to influence nominating processes for local, state, or national office, bringing to an end practices in some cases a century or more old. The 1950s and 1960s were a golden age of sorts for American local organization. Traditional patronage organizations hung on quite successfully, Democratic and Republican ‘amateur’ organizations appeared and thrived, and some especially strong municipal parties ... enjoyed perfect or nearly perfect records of slating success. All these forms of structure fared very badly in the 1970s, largely losing out to candidate organizations that introduced capital-intensive campaigns.”

²¹To examine whether the impact of party strength varies by party composition in the legislature, we interacted the Democratic seat share with the party strength variable in the spending analysis; this interaction had no effect.

²²When including state fixed effects, we drop *Initiative*, since it is nearly invariant over time, *Ln Population*, because it is perfectly collinear with state fixed effects and the log of population density, and the dummy for southern states, *South*.

²³We first drop all races where a third-party candidate received more than 10% of the vote, and then only use state-years with three or more “clean” two-party races.

²⁴If *Party Organization* is dropped from the specification, then the coefficient on *Legislative Party Strength* is largely unchanged but is no longer statistically significant (p-value = .103).

²⁵These results are not robust to the use of levels instead of logs of financial variables. We have not found evidence that outliers are driving this difference in the results.

²⁶As with the federal aid analysis, the results are more sensitive to the inclusion and exclusion of variables when we use levels of financial variables instead of logs.

²⁷We also collapse the data and conduct a simple differences-in-differences analysis. By and large, the results are similar to those found in Tables 5 and 6. With a complete set of controls included, the estimates imply that states which moved from strong parties to weak parties in the 1970s experienced a 17 percent larger increase in federal aid than states that had weak parties in both time periods. Similarly, states which moved from strong parties to

weak parties in the 1970s experienced a four percent larger increase in spending than those that had weak parties in both time periods.

Proofs

Remark A1. Let $(\hat{X}, \hat{\mathbf{z}})$ be the socially optimal policy vector. Then $\hat{z}_i = 0$ for all $i = 1, \dots, n$, and \hat{X} solves $Nb'(\hat{X}) = c'(\hat{X})$.

Proof. Differentiating (2) yields:

$$\frac{\partial U}{\partial X} = Nb'(\hat{X}) - c'(\hat{X} + \hat{Z}) = 0 \quad (4)$$

$$\frac{\partial U}{\partial z_i} = \frac{N}{n} [1 - c'(\hat{X} + \hat{Z})] = 0 \quad (5)$$

Since $c' > 1$, $\partial U / \partial z_i$ is always negative, so $\hat{z}_i = 0$ (corner solution), implying $\hat{Z} = 0$. Substituting this optimal value of \hat{Z} into (4) yields the condition for \hat{X} . *QED*

Remark A2. The ideal policy vector for legislator i , $(\bar{X}, \bar{\mathbf{z}})$, consists of a smaller-than-optimal public good \bar{X} , $\bar{z}_j = 0$ for $j \neq i$, and $\bar{z}_i > 0$, where \bar{z}_i solves (7).

Proof. Differentiating (1) yields:

$$\frac{\partial U}{\partial X} = \frac{1}{n} [Nb'(\bar{X}) - c'(\bar{X} + \bar{Z})] = 0 \quad (6)$$

$$\frac{\partial U}{\partial z_i} = \frac{N}{n} [1 - c'(\bar{X} + \bar{Z})/n] = 0 \quad (7)$$

$$\frac{\partial U}{\partial z_j} = -\frac{N}{n^2} c'(\bar{X} + \bar{Z}) = 0 \quad (8)$$

Since $c' > 1$, $\partial U / \partial z_j$ is always negative, so $\bar{z}_j = 0$ (corner solution). Next, $\bar{z}_i > 0$ and $\bar{X} > 0$ solve (6) and (7) (assuming an interior solution) such that $c'(\bar{X} + \bar{Z}) = n$ and $b'(\bar{X}) = n/N$.

Since $c''(X + Z) > 0$ and $b''(X) < 0$, $\bar{X} < \hat{X}$. *QED*

Remark A3. Let (\tilde{X}, \tilde{z}_i) be optimal for legislator i given the behavior of all other legislators, who are assumed to select the projects for their districts. Then, $\partial \tilde{z}_i / \partial \alpha > 0$; $\partial \tilde{X} / \partial \alpha < 0$; and $\partial(\tilde{X} + \tilde{Z}) / \partial \alpha > 0$.

Proof. Differentiating (3) yields:

$$\frac{\partial U}{\partial X} = \frac{1}{n} [Nb'(\tilde{X}) - c'(\tilde{X} + \tilde{Z})] = 0 \quad (9)$$

$$\frac{\partial U}{\partial z_i} = \frac{N}{n} [\alpha - c'(\tilde{X} + \tilde{Z})/n] = 0 \quad (10)$$

We can combine (9) and (10) to obtain $n\alpha = Nb'(\tilde{X})$. Since $b''(X) < 0$ by assumption, this implies $\partial\tilde{X}/\partial\alpha < 0$. Next, we can rewrite (10) as $n\alpha = c'(\tilde{X} + \tilde{Z})$. Since $c''(\tilde{X} + \tilde{Z}) > 0$, this implies that $\partial(\tilde{X} + \tilde{Z})/\partial\alpha > 0$, implying that total spending is increasing in α . These two results imply that $\partial\tilde{z}_i/\partial\alpha > 0$. *QED*

Proposition A1. In the stationary subgame perfect Nash equilibrium of the game, $\partial(X^* + Z^*)/\partial\alpha > 0$, $\partial X^*/\partial\alpha < 0$, and $\partial Z^*/\partial\alpha > 0$.

Proof. Denote i as the agenda setter and k as any other legislator receiving a project in the bill. The agenda setter maximizes

$$\frac{1}{n} [\alpha N z_i + Nb(X) - c(X + Z)] + \lambda \left(\frac{1}{n} [\alpha N z_k + Nb(X) - c(X + Z)] - \delta v \right),$$

where $v = \frac{\alpha N}{n} \left[\frac{z_i^*}{n} + \frac{(q-1)z_k^*}{n} \right] + \frac{1}{n} [Nb(X^*) - c(X^* + Z^*)]$ is the equilibrium continuation value of a legislator receiving an offer from the agenda setter.

The first order conditions are as follows:

$$\frac{\partial L}{\partial X} = \frac{(1 + \lambda)}{n} [Nb'(X^*) - c'(X^* + Z^*)] = 0 \quad (11)$$

$$\frac{\partial L}{\partial z_i} = \frac{N}{n} [\alpha - (1 + \lambda)c'(X^* + Z^*)/n] = 0 \quad (12)$$

$$\frac{\partial L}{\partial z_k} = \frac{N}{n} [\lambda\alpha - (q - 1)(1 + \lambda)c'(X^* + Z^*)/n] = 0 \quad (13)$$

$$\frac{\partial L}{\partial \lambda} = \frac{1}{n} [\alpha N z_k^* + Nb(X^*) - c(X^* + Z^*)] - \delta v = 0. \quad (14)$$

We can simplify the above as follows:

$$(11) \text{ implies } Nb'(X^*) = c'(X^* + Z^*). \quad (15)$$

$$(12) \text{ implies } \alpha n = (1 + \lambda)c'(X^* + Z^*). \quad (16)$$

$$(13) \text{ implies } \lambda\alpha n = (q - 1)(1 + \lambda)c'(X^* + Z^*). \quad (17)$$

First, taking second-order conditions on (11)-(14), and using the assumption that $b''(X) < 0$ and $c''(X + Z) > 0$, it follows that we are working with maxima and not minima. Next, we establish that λ^* is independent of α . To see this, note that (16) and (17) imply that

$\lambda^* = (q - 1)$. Next, from (16) and (17), it follows that $(X^* + Z^*) = (c')^{-1}(\frac{\alpha n}{q})$. From (15) and (16) it follows that $X^* = (b')^{-1}(\frac{\alpha n}{Nq})$. Combining these two facts gives $Z^* = (c')^{-1}(\frac{\alpha n}{q}) - (b')^{-1}(\frac{\alpha n}{Nq})$. $(c')^{-1}$ is increasing (since c' is, by assumption) and $(b')^{-1}$ is decreasing (since b' is, by assumption). It immediately follows that $\partial(X^* + Z^*) / \partial\alpha > 0$ and $\partial X^* / \partial\alpha < 0$, which in turn implies $\partial Z^* / \partial\alpha > 0$.

As in other models of this type (Baron 1993), the continuation value v is an expected value determined in equilibrium and is, therefore, treated as a constant when taking first order conditions. Allowing v to vary when taking first order conditions would imply that the agenda setter is also determining the choice of X and Z for future agenda setters. The value of v is determined when the first order conditions are used to solve for the equilibrium values of the individual projects. For this to be an equilibrium, we must ensure that the continuation value, which is a function of the agenda setter's proposal, is consistent with maximizing behavior. In this model, X^* and Z^* can be determined without reference to v , but v is needed to fix the values of z_i^* and z_k^* . Using (14) and substituting the formula for v provided earlier gives $\frac{(1-\delta)}{n} [Nb(X^*) - c(X^* + Z^*)] + \frac{\alpha N}{n} [z_k^* - \delta \frac{z_k^{*(q-1)}}{n}! - \delta \frac{z_i^*}{n}] = 0$. Because by construction $Z^* = \frac{N}{n}(z_i^* + (q-1)z_k^*)$, we can solve for both z_k^* and z_i^* , with $z_k^* = \frac{\delta Z^*}{N} - \frac{(1-\delta)}{\alpha N} (Nb(X^*) - c(X^* + Z^*))$ and $z_i^* = (n - (q-1)\delta) \frac{Z^*}{N} + \frac{(q-1)(1-\delta)}{\alpha N} (Nb(X^*) - c(X^* + Z^*))$. (This is a slight abuse of notation, since technically Z^* is comprised of z_i^* and z_k^* . However, Z^* can be treated as fixed here, since it was determined earlier.) Note that if $\delta = 1$, this reduces down to a simple relationship between z_i^* and z_k^* , with $z_i^* = (n - q + 1)z_k^*$, reflecting the agenda setter's advantage in the legislative process. *QED*

Remark A4. In the stationary subgame perfect Nash equilibrium of the game, $\partial(X^* + Z^*) / \partial q < 0$, $\partial X^* / \partial q > 0$, and $\partial Z^* / \partial q < 0$.

Proof. Follows immediately from the proof of Proposition A1. *QED*

Remark A5. In the stationary subgame perfect Nash equilibrium of the game, if (q/n) is fixed, then $\partial(X^* + Z^*) / \partial n = 0$, $\partial X^* / \partial n = 0$, and $\partial Z^* / \partial n = 0$.

Proof. Follows immediately from the proof of Proposition A1. *QED*

Table 1
Summary Statistics

Variable	Mean	Std Dev	Min	Max
1957-1970, N=644				
Ln State Spending Per Capita (State + Local)	6.11	.29	5.48	6.94
Party Organization (TPO)	.28	.45	0	1
Legislative Party Strength (Zeller)	.37	.48	0	1
Ln Income Per Capita	8.03	.23	7.29	8.53
Ln Fed Aid Per Capita (State + Local)	4.28	.51	2.63	5.71
Ln Population	14.70	1.03	12.47	16.80
Ln Density	4.08	1.40	.86	6.87
Elderly	.09	.02	.05	.13
Schoolage	.26	.02	.21	.31
Dem Leg Seat Share	.62	.25	.04	1.00
Avg Dem Vote Share	.55	.10	.31	.86
Divided Govt (dummy)	.42	.49	0	1
South (dummy)	.33	.47	0	1
Upper House Seats (100s)	.39	.10	.17	.65
Lower House Seats (100s)	1.21	.66	.35	4.00
Initiative (dummy)	.37	.48	0	1
1957-2000, N=2,024				
Ln State Spending Per Capita (State + Local)	6.58	.40	5.38	7.46
Party Organization	.10	.30	0	1
Ln Income Per Capita	8.36	.30	7.29	9.14
Ln Fed Aid Per Capita (State + Local)	4.92	.57	2.64	6.13
Ln Population	14.88	1.02	12.47	17.34
Ln Density	4.27	1.36	.86	7.03
Elderly	.11	.02	.04	.19
Schoolage	.22	.04	.07	.31
Dem Leg Seat Share	.60	.21	.04	1.00
Avg Dem Vote Share	.53	.07	.31	.86
Divided Govt (dummy)	.49	.50	0	1
South (dummy)	.33	.47	0	1
Upper House Seats (100s)	.39	.10	.17	.65
Lower House Seats (100s)	1.17	.60	.35	4.00
Initiative (dummy)	.42	.49	0	1

Table 2
Split-Ticket Voting

	ANES			Aggregate Votes		
	Strong Parties	Weak Parties	t-stat.	Strong Parties	Weak Parties	t-stat.
Pre-1970	.200	.261	(6.11)	.026	.050	(6.59)
Post-1970	.337	.296	(-5.27)	.073	.079	(1.59)

In each group, the t-statistic is for a test of the difference in means between states with strong parties and states with weak parties.

For the ANES analysis: pre-1970 period is 1952-1970 and post-1970 period is 1972-2004.

For the aggregate analysis: pre-1970 period is 1946-1970 and post-1970 period is 1971-2006.

Table 3
Federal Aid to the U.S. States, 1957-1970
 Dep Var = Ln Federal Aid Per Capita (State + Local)

	(1)	(2)	(3)	(4)
Party Organization	-.37*** (.11)	-.17** (.088)	-.0013 (.084)	.027 (.081)
Ln Income Per Capita	-.09 (.25)	.26 (.37)	.33 (.28)	.36 (.28)
Ln Density	-	-	-.17*** (.045)	-.15*** (.045)
Legislative Party Strength	-	-	-	-.11* (.060)
Other Controls	No	Yes	Yes	Yes
R-squared	.58	.77	.82	.83

OLS regression with year dummies included in all specifications and standard errors clustered by state. N=644. * $p < .10$; ** $p < .05$; *** $p < .01$.

Table 4
Spending in the U.S. States, 1957-1970
 Dep Var = Ln State Spending Per Capita (State + Local)

	(1)	(2)	(3)	(4)	(5)
Party Organization	-.18*** (.037)	-.08*** (.036)	-.07*** (.021)	-.08*** (.023)	-.07*** (.024)
Ln Income Per Capita	.83*** (.10)	.93*** (.13)	.84*** (.10)	.83*** (.10)	.84*** (.10)
Ln Density	-	-.044*** (.016)	-	.0058 (.011)	.0069 (.011)
Ln Federal Aid Per Capita (State + Local)	-	-	.29*** (.031)	.30*** (.033)	.30*** (.034)
Legislative Party Strength	-	-	-	-	-.013 (.024)
Other Controls	No	Yes	Yes	Yes	Yes
R-squared	.78	.88	.93	.93	.93

OLS regression with year dummies included in all specifications and standard errors clustered by state. N=644. * $p < .10$; ** $p < .05$; *** $p < .01$.

Table 5
Federal Aid to the U.S. States, 1957-2000
 Dep Var = Ln Federal Aid Per Capita (State + Local)

	(1)	(2)	(3)	(4)
Party Organization	-.36*** (.09)	-.26*** (.080)	-.22*** (.076)	-.22*** (.079)
Ln Income Per Capita	-.14 (.14)	.12 (.21)	.24 (.24)	.20 (.19)
Ln Density	-	-	-.047 (.031)	-.57*** (.14)
Other Controls	No	Yes	Yes	Yes
State Fixed Effects	No	No	No	Yes
R-squared	.79	.86	.86	.94

OLS regression with year dummies included in all specifications and standard errors clustered by state. N=2,024. * $p < .10$; ** $p < .05$; *** $p < .01$.

Table 6
Spending in the U.S. States, 1957-2000
 Dep Var = Ln State Spending Per Capita (State + Local)

	(1)	(2)	(3)	(4)	(5)
Party Organization	-.17*** (.032)	-.12*** (.028)	-.045* (.025)	-.039 (.026)	-.037** (.015)
Ln Income Per Capita	.74*** (.094)	.78*** (.11)	.68*** (.066)	.70*** (.067)	.45*** (.079)
Ln Density	–	-.025* (.012)	–	-.0085 (.0065)	-.0063 (.030)
Ln Federal Aid Per Capita (State + Local)	–	–	-.35*** (.033)	.34*** (.032)	.25*** (.030)
Other Controls	No	Yes	Yes	Yes	Yes
State Fixed Effects	No	No	No	No	Yes
R-squared	.90	.93	.96	.96	.98

OLS regression with year dummies included in all specifications and standard errors clustered by state. N=2,024. * $p < .10$; ** $p < .05$; *** $p < .01$.

Table 7
Government Spending and Federal Aid in the U.S. States

Dep Var (a) = Ln Federal Aid Per Capita (State + Local)

Dep Var (b) = Ln State Spending Per Capita (State + Local)

	1957-1970		1957-2000	
	Panel		Panel	
	(a)	(b)	(a)	(b)
Party Organization	.026 (.081)	-.074*** (.024)	-.22*** (.079)	-.037** (.015)
Ln Income Per Capita	.36 (.28)	.84*** (.10)	.20 (.19)	.45*** (.079)
Ln Fed Aid Per Capita	-	.30*** (.034)	-	.25*** (.020)
Ln Density	-.15*** (.045)	.0069 (.012)	-.57*** (.14)	-.0063 (.030)
Legislative Party Strength	-.11* (.060)	-.013 (.024)	-	-
Ln Population	-.127*** (.043)	-.0069 (.014)	-	-
Elderly	1.29 (1.89)	.31 (.68)	1.37 (1.52)	-.63 (.53)
Schoolage	.39 (1.75)	.65 (.68)	.82 (1.00)	-1.13*** (.35)
Dem Leg Seat Share	.19 (.18)	-.12* (.067)	.06 (.13)	-.059** (.028)
Avg Dem Vote Share	.56 (.39)	.0054 (.18)	.16 (.18)	-.11 (.09)
Divided Govt (dummy)	-.015 (.025)	-.0021 (.0090)	.011 (.012)	.0012 (.0044)
South (dummy)	-.075 (.11)	-.015 (.037)	-	-
Upper House Seats	.0019 (.0025)	.0015 (.0012)	.0072 (.0076)	.00064 (.0013)
Lower House Seats	-.00039 (.00044)	-.00043*** (.00011)	-.00046 (.00070)	.00034** (.00016)
Initiative (dummy)	.00020 (.093)	-.035* (.020)	-	-
State fixed effects	No	Yes	No	Yes
R-squared	.83	.93	.94	.98
N	644	644	2024	

OLS regression with year dummies and clustered standard errors in panel analyses only.
 * $p < .10$; ** $p < .05$; *** $p < .01$.