Theories of Strategic Nonmarket Participation: Majority-Rule and Executive Institutions

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This paper presents theories of strategic nonmarket participation in majority-rule and executive institutions and develops from those theories a set of principles for nonmarket strategy. The theories are based on models of vote recruitment in client and interest-group politics and on models of common agency. The basic strategies developed are majority building, vote recruitment, agenda setting, rent-chain mobilization, majority protection, and competitive agenda setting and vote recruitment.

1. INTRODUCTION

The performance of firms depends not only on their market strategies but also on their nonmarket strategies. Nonmarket strategies are frequently directed at government policies that affect the structure and functioning of markets and the competitive advantages of their participants. This implies that nonmarket strategies must be integrated with market strategies for maximal effectiveness, as emphasized by Baron (1995b, 1997, 1999). This paper focuses not on the integration of market and nonmarket strategies, but on theories that provide the foundations for nonmarket strategies. From these theories a set of nonmarket strategy principles can be deduced and used in formulating integrated strategies.

The theory of nonmarket strategy is in its infancy, and its ultimate content is difficult to predict. It is likely, however, that when fully developed it will have characteristics similar to the theory of market strategy as developed from the economics of industrial organization.[1] That is, the theory of nonmarket strategy is likely to be composed of a collection of specific models tailored to the structure and characteristics of markets, the nature of the nonmarket competition on specific issues, the relevant institutions, and the characteristics

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1. See Besanko et al. (1996), Oster (1994), Porter (1980, 1985), and Saloner et al. (2001).

of the interests attempting to influence outcomes. The theory is thus likely to be finely tailored to the specific nonmarket issue and the context in which it is addressed.

The focus here is on theories of strategic participation in nonmarket institutional arenas. From a positive perspective the theories provide explanations for which interests will participate in nonmarket competition, the actions they will take, and the resulting outcomes. From a normative (strategy) perspective the theories provide guides to the selection of strategies to participate effectively in public processes.

The study of competitive participation in public processes takes two general forms, as noted by Grossman and Helpman (1994). One approach views elections as the institutions in which policies are chosen. Candidates or political parties compete in elections either with commitments to the policies they will enact if elected or, in the absence of commitment, with voter anticipation of the policies they will enact once in office. The electoral approach is complicated by the nature of the electoral process and the competition to be candidates. Moreover, even if an elected candidate has committed to a policy, interests may attempt to influence policy and may be able to dissuade officeholders from fulfilling their commitments. Moreover, in a collective institution such as a legislature, an officeholder may be able to shirk on commitments with ease. The second approach focuses on government in office and the policies it chooses.

This paper takes the second approach with an emphasis on majority-rule legislatures and executive (administrative) agencies. The policies are chosen in two contexts. In the first, referred to as *client politics*, the firm or interest has no direct competition. This may be because there is no opposing interest or the opposing interests have high costs of taking nonmarket action or are plagued by the free-rider problem. If opposing interests are active, interest-group competition results. The nature of this nonmarket competition affects both the bargaining positions of interests and their choice of nonmarket strategies.

Strategies of nonmarket participation can be grouped into those focusing on the provision of information and those focusing on the provision of politically valuable resources and support. The former are grounded in theories of incomplete information, whereas the latter are generally studied in the context of complete information. This paper addresses only complete information settings.

Theories of nonmarket strategy must be tailored to the institution in which the policy is to be chosen. In majority-rule institutions the principal strategy is majority building, and the instrument is vote recruitment. In conjunction with a vote recruitment strategy an interest may also employ an agenda-setting strategy through its allies in

the legislature. In addition, an interest may use a rent-chain mobilization strategy to affect the voting by legislators whose constituents as rentholders are affected by the policy. There is thus a mix of nonmarket strategies, and a theory should identify the comparative statics of that mix. The principal vote recruitment strategy is based on Snyder (1991), and that theory is extended in a number of directions here. The rent mobilization theory is articulated in Baron (1995a, 2000a), and a formal theory is presented in Baron (1999). Agenda-setting strategies are based on Romer and Rosenthal (1979) and Snyder.

The principal theory of interest-group competition in a majority-rule institution is that of competitive vote recruitment as developed by Groseclose and Snyder (1996), Groseclose (1996), and Banks (1999). This theory is based on a sequential model of vote recruitment, and Baron (2000b) extends the theory to an infinite-horizon model.

In executive institutions a single decision maker rather than a majority-rule body chooses the policy. Executive institutions are considered here in the context of interest-group competition. The principal theories are based on Colonel Blotto games when the set of alternatives is fixed, and more generally on common-agency games. The focus here is on common-agency games as developed in the work of Bernheim and Whinston (1986) and Grossman and Helpman (1994).[2] There is yet no general model of simultaneous vote recruitment in a majority-rule institution, although Helpman and Persson (1998) present a model of a majority-rule institution with restricted interest-group competition. Similarly, Dharmaphala (1999) considers a model of a majority-rule institution in which one legislator is the agenda setter, which results in the interest groups focusing all their attention on the agenda setter as in an executive institution. A model is presented here of interest-group competition on agenda setting in conjunction with competitive vote recruitment in a majority-rule institution.

Baron (1999) focuses on the integration of market and nonmarket strategies using specific vote-recruitment and interest-group competition strategies. This paper focuses on extensions of the nonmarket strategies. The approach taken is to forsake generality for the sake of tractability and clear predictions. This approach allows the identification of normative prescriptions for nonmarket strategies, leaving their generality to be studied.

In the example presented next, Federal Express developed a vote-recruitment strategy using its relationships with senators to end a filibuster organized by the allies of organized labor. Federal Express has a strategy of building relationships with members of Congress and

2. See also Grossman and Helpman (1995, 1996) and Dixit et al. (1997).

from time to time calling on them on important issues. The issues on which, and the extent to which, a company, and particularly a company with substantial resources, should exercise restraint in its political activities is a contentious issue centering on the potential for the abuse of power, undue influence, and manipulation of the political process. The law provides some guidance and proscribes certain actions, but there are few bright lines separating actions that are responsible and those that are not. These concerns are addressed elsewhere (Baron 1999, 2000a), and here the nonmarket actions are assumed to be both within the law and within the realm of responsible participation in public processes.

2. Client Politics and Majority-Rule Institutions

2.1 An Example

In 1996 Federal Express was threatened by recently enacted legislation that inadvertently changed the rules under which labor unions could organize its employees. Federal Express sought legislation to return its labor organization rules to their original jurisdiction, and building a majority, a supermajority in this case, was the focus of its nonmarket strategy.

2.1.1 Federal Express and Labor Organization. Historically, labor relations for the Federal Express Corporation were governed by the Railway Labor Act (RLA), which covered airline and railroad companies. The RLA required a union to organize the employees of a company nationally. Labor unions claimed, however, that a law enacted in 1995 to phase out the Interstate Commerce Commission contained a clause that subjected Federal Express's truck drivers to labor organization under the National Labor Relations Act (NLRA), which allowed unions to organize workers locally, i.e., in each facility. Avoiding unionization was a key element of Federal Express's market strategy, and since local organization was usually easier for labor unions than was attempting to organize a company's workers nationally, Federal Express sought legislation to clearly place its labor practices under the RLA.[3]

Federal Express's nonmarket strategy was to have its Senate allies introduce in conference committee a provision in an authorization bill for the Federal Aviation Administration. The provision would make Federal Express's labor relations subject to the RLA by

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3. Of Federal Express's 110,000 employees, only 3,000 pilots were organized.

declaring Federal Express to be an "express company." The provision was accepted by the conference committee. However, when the bill came back to the Senate in October 1996 for final passage, senators aligned with organized labor sought to block the bill until the provision was dropped. They began a filibuster. Federal Express had to build a supermajority of at least 60 votes in the Senate to invoke cloture to stop the filibuster. Passage of the authorization bill was certain if it were brought to a final passage vote. If cloture could be invoked and hence the provision retained, Federal Express would achieve its objective, since the House was certain to pass the bill with the provision.

2.1.2 AN ANALYTICAL FRAMEWORK. To analyze this case, suppose that Federal Express and its allies were willing to trade votes on other legislation or provide other politically valuable resources to obtain the needed votes to invoke cloture. Let the status quo y denote NLRA jurisdiction and the alternative x denote RLA jurisdiction. These points can be located on a line representing the degree of difficulty in organizing Federal Express's employees. Assume that senators have preferences that are single-peaked with an ideal point. Let $x = 60$, the status quo $y = 30$, and the filibuster pivot $f = 41$ (the 41st ideal point) in the Senate. Suppose that senators have symmetric utility functions, so that their preferences for y or x are determined by the distance from their ideal points to y and x, respectively. Consequently, every senator with an ideal point to the left of the midpoint $(x + y)/2 = 45$ prefers y to x, and every senator with an ideal point to the right of 45 prefers x to y. Assume also that the ideal points of the senators are uniformly distributed over the interval. Since 45 legislators prefer y to x, the filibuster will be successful unless Federal Express and its allies act. (Federal Express's allies are assumed to have ideal points located near and to the right of x.) Assume that if the resources or traded votes are sufficiently valuable, a senator will vote for x, and also assume that Federal Express and its allies do not want to provide more resources than are necessary to recruit a senator's vote.

On which senators should Federal Express focus, and how much resources should be provided?

2.1.3 ANALYSIS. Although organized labor opposed the alternative sought by Federal Express, it had already executed its strategy, and the final move belonged to Federal Express. This stage of the labor-organization issue is thus characteristic of client politics, with

only Federal Express active in building a supermajority to invoke clo-
ture. The agenda was fixed, the two alternatives being the status quo
y (NLRA) and the RLA provision x, so the focus was on obtaining the
required votes and not on influencing the agenda. Federal Express's
objective and the focus of its nonmarket strategy was straightforward:
to recruit the 60 votes needed to invoke cloture. Fifty-five senators,
those with ideal points greater than $(x + y)/2 = 45$, would vote for
x in the absence of any action by Federal Express, so only five addi-
tional votes had to be recruited. The instrument of its nonmarket strat-
egy was providing politically valuable resources to senators, and the
least-costly set of pivotal senators comprised those with ideal points
from 41 to 45. In this case, the preferences of the legislators were likely
to be known, and the consequences for organizing the truck drivers
under the two alternatives were well-understood. Consequently, the
politics were characterized by complete information. The bargaining
power in this case was not clear, but it seemed to rest with Federal
Express, since it had the last move and could make take-it-or-leave-it
offers.

The strategy deployed by Federal Express was to focus on piv-
otal legislators, who in this case were Democrats who traditionally
would vote with organized labor on such an issue. Those senators
included Ernest Hollings, Max Baucus, and Tom Daschle. Federal
Express's strategy was to build on the relationships it had devel-
oped over time, to lobby for the provision, and to enlist the aid of its
allies. Federal Express had a continuing set of issues before Congress,
so it was experienced both in addressing nonmarket issues and in
deploying a broad set of nonmarket strategies to obtain its objectives.
As Doyle Cloud, vice president in charge of regulatory and govern-
ment affairs, explained, "We have issues constantly in Washington
that affect our ability to deliver the services our customers demand
as efficiently as possible."[4] For all the issues on its agenda, during the
first six months of 1996, Federal Express spent $1,149,150 on lobbying,
including $367,000 on outside law firms. Using outside firms is com-
mon, particularly for their contacts and established relationships with
government officials. Federal Express also has on its board of direc-
tors Howard H. Baker, Jr., former Republican leader in the Senate,
and George J. Mitchell, former Democratic leader in the Senate. Fed-
eral Express also was the fifth largest campaign contributor in the
1995–1996 election cycle, contributing $600,500 through August 30,
1996. In addition, on a regular basis Federal Express made its four cor-
porate jets available to members of Congress. Although the members

4. *The New York Times*, October 12, 1996.

were required to reimburse the company at the equivalent of first-class air fare, the corporate jets provided privacy and convenience to their passengers. In most cases, the flights took members of Congress to fundraising events.[5]

Federal Express also benefited from the efforts of its allies in the Senate, many of whom were from the South. In addition, former Senator James R. Sasser of Tennessee, the current ambassador to China, was said to have chatted with Senator J. Bennett Johnston about the Federal Express provision.[6]

Senator Russell D. Feingold, Democrat of Wisconsin, who voted against Federal Express, assessed its overall strategy: "I was stunned by the breadth and depth of their clout up here.... The sense I got was that this company had made a real strong effort to be friendly and helpful to Congress.... In these informal conversations [with senators], people mentioned that they had flown in a FedEx plane or gotten other favors."[7]

Federal Express's nonmarket strategy was successful, and the vote on cloture was 66 to 31.[8] One interpretation of this situation is that Federal Express figuratively "recruited" some additional votes as insurance, i.e., to provide for the possibility that it might have misestimated the preferences of legislators.

Federal Express's nonmarket activities are surely more extensive than those of most firms, and in part this is explained by its operations in a semi-regulated business. Although its activities may be pushing the envelope, the principles of building a majority, developing access, lobbying, and providing politically valuable resources as a means of recruiting votes are important components of the nonmarket strategies of firms, as well as labor unions, environmentalists, and other interests.

2.2 MAJORITY-BUILDING STRATEGIES IN CLIENT POLITICS

In client politics an interest has an incentive to act only if the decision would otherwise be contrary to its policy preferences, so nonmarket strategies are offensive in client politics. A strategy is effective if it contributes to a favorable change in the status quo, and in a majority-rule

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5. "Mr. Cloud said that during political seasons, Federal Express might fly a group of lawmakers about once a week." (*The New York Times*, October 12, 1996.)

6. Ambassador Sasser had been retained as a consultant by Federal Express prior to his confirmation as ambassador. (*The New York Times*, October 12, 1996.)

7. *The New York Times*, October 12, 1996.

8. Federal Express had to win two votes. The first was to overrule the Senate parliamentarian who had ruled that insertion of the provision in conference committee exceeded the authority of the conferees. The vote to overrule was 56–39.

institution that requires building a majority to support an alternative to the status quo. Such a strategy may involve the provision of support or politically valuable resources to officeholders. Those resources may be votes on other bills; endorsements; favors; vote trades by allies; electoral resources such as votes, campaign contributions, volunteers, and grassroots support by the rentholders of the interest; and expectations of post-officeholding employment. The use of such instruments to build a majority will be referred to as *vote recruitment*. Vote recruitment is not to be thought of as an explicit contract with a quid pro quo, but instead is to be understood more as a long-term relationship in which support is provided to those who back the interest's policy objectives.

The first step in vote recruitment in majority-rule institutions is to identify pivotal legislators. In general, there are many sets of pivotal voters, so building a majority focuses on those who are easiest to recruit, i.e., on the least-costly set of pivotal voters. For example, any sixty votes is sufficient for Federal Express, but it should focus on those whose votes are not too costly; e.g., they should not bother with those who are closely aligned with organized labor. Similarly, resources need not be provided to all senators who vote with Federal Express, since some of them would vote that way in the absence of support. Since the provision of politically valuable resources to legislators is costly, the interest will recruit the needed votes if the gain from obtaining its preferred alternative is greater than the cost of those resources.

2.3 A Theory of Vote Recruitment in Client Politics

To make the analysis more explicit, consider a model of a strategic situation such as that faced by Federal Express. The analysis will be conducted initially for the case of simple, or 50%, majority rule, and then supermajority rule will be considered as in the Federal Express case. To simplify the exposition, a unicameral legislature is considered; the extension to a bicameral legislature is immediate. The vote recruiters in this case could be an interest, its allies, a coalition, the president, or a political party.[9]

A legislator is identified by her ideal point z, and to simplify the exposition, assume that there is a continuum of legislators whose ideal

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9. This theory pertains to a political system such as that of the United States in which legislators vote according to their constituents' and their own personal preferences and thus exhibit a considerable degree of independence. In a political system with strong parties, the focus of a majority-building strategy would be on the parties in the governing coalition.

points are uniformly distributed on the interval $[-\frac{1}{2}, \frac{1}{2}]$.[10] The median legislator m thus has ideal point $z_m = 0$. The utility function $U(w; z)$ of legislator z is assumed to be quasilinear and expressed as

$$U(w; z) = -\alpha|w - z| + r_w,\tag{1}$$

where $w \in \Re^1$ denotes a policy, $\alpha > 0$ is a parameter that denotes the intensity of the legislator's policy preferences, and r_w is the amount of politically valuable resources provided by the interest. The utility function is to be interpreted as reflecting legislator z's preference for her vote and not for the policy outcome. That is, the term $-\alpha|w-z|$ reflects position-taking preferences that may be derived from constituents' preferences over the vote of their representative.[11] The legislator also cares about resources. The resources may be electoral (as in the case of campaign contributions, endorsements, and volunteers) or may reflect the value of a trade of her vote on this issue for a vote on another issue or for rewards provided by a party based on how the legislator votes. A legislator's vote is observable, so the resources r_w are conditional on how she votes.

The interest is assumed to seek an alternative $x > 0$ that is greater than the status quo y; i.e., $x \geq y$, and the agenda is $A = \{x, y\}$. In the absence of the provision of resources, let the legislator who is indifferent between voting for x and for y have an ideal point z^I. If $z^I \leq z_m$, the legislature will choose x over y, since a majority prefers x to y. The interest can then be inactive and obtain its preferred alternative. If $z^I > z_m$, however, the interest must recruit votes to obtain passage of x. Consequently, a necessary condition for an interest to take nonmarket action is that $(x + y)/2 > z_m$. That is, interests undertaking nonmarket action in client politics are those for which the status quo is disadvantageous.

If her vote is recruited through the provision of resources r_x, legislator z will vote for x over y if and only if

$$-\alpha|x - z| + r_x \geq -\alpha|y - z|.$$

The legislator is thus assumed to vote based on her induced preferences rather than on whether she is pivotal. The interest in effect determines which voters are pivotal, and in equilibrium each of the legislators whose vote is recruited is pivotal. The resources the interest

10. This model can also represent influence in executive institutions by letting the distribution of z put mass one on the ideal point of the executive.

11. In equilibrium, a legislator z who receives resources r_w if she votes for alternative w is also pivotal for the policy in the sense that if she were to vote against w it would fail.

must provide to legislator z is her reservation value $U(y; z) - U(x; z)$, which is[12,13]

$$U(y; z) - U(x; z) = \begin{cases} \alpha(x - y) & \text{if} \quad z \leq y, \\ 2\alpha\left(\frac{x+y}{2} - z\right) & \text{if} \quad y \leq z \leq x, \\ -\alpha(x - y) & \text{if} \quad x \leq z. \end{cases} \tag{2}$$

The interest provides resources only to the least-costly set of pivotal legislators. Those with $z > (x + y)/2$ will vote for x in the absence of the provision of resources, so no resources need be provided to them.[14] Those with $z < 0$ are more costly than those with $z \in [0, (x + y)/2]$, so no resources are provided for $z < 0$. Consequently, the legislators recruited are those with centrally located preferences who are mildly opposed to the alternative. The optimal resources schedule $r^*(x, y; z)$ is thus

$$r^*(x, y; z) = \begin{cases} 0 & \text{if} \quad z < 0, \\ \alpha(x - y) & \text{if} \quad 0 \leq z \leq \max\{0, y\}, \\ 2\alpha[(x + y)/2 - z] & \text{if} \quad \max\{0, y\} \leq z \\ & \qquad \leq (x + y)/2, \\ 0 & \text{if} \quad z > (x + y)/2. \end{cases} \tag{3}$$

The interest thus provides different amounts of resources depending on the preferences of the legislator. In an empirical study Groseclose concluded that recruiting a majority involves price discrimination.

The function $r^*(x, y; z)$ is strictly decreasing in z for $z \in [0, (x + y)/2]$, so the interest provides more resources the more strongly opposed the pivotal legislator is to x. Similarly, the more intense are the legislators' policy preferences (the higher is α), the more resources must be provided. Similarly, $r^*(x, y; z)$ is increasing in x, so the interest must provide greater resources to recruit votes the more extreme is x.

The total resources $R(x, y)$ required to recruit the pivotal voters are

$$R(x, y) = \int_0^{(x+y)/2} r^*(x, y; z)\, dz$$

$$= \begin{cases} (\alpha/4)(x + y)^2 & \text{if} \quad y \leq 0, \\ (\alpha/4)(x + y)^2 - \alpha y^2 & \text{if} \quad y > 0. \end{cases} \tag{4}$$

12. Snyder assumes that legislators' utility functions are quadratic, which yields a resources function $\tilde{r}(x, y; z)$ given by $\tilde{r}(x, y; z) = 2\alpha(x - y)[(x + y)/2 - z]$.

13. This formulation is based on the assumptions that the interest has all the bargaining power and can price-discriminate among legislators. Other cases are considered below.

14. Negative resources are not allowed.

If the interest prefers x to y by more than $R(x, y)$, it will provide the resources to recruit the needed votes and thus change the policy from y to x. Otherwise, the cost of participation is greater than the benefit obtained.

To investigate the participation decision more formally, suppose the policy preferences of the interests are represented by a quadratic utility function $u_g(w; z_g) = -\beta(w - z_g)^2$, where $z_g \geq x$, is the interest's ideal point and $\beta > 0$ indexes the intensity of policy preferences. The utility function $U_g(w; z_g)$ of the interest is assumed to be quasilinear,

$$U_g(x; z_g) = -\beta(x - z_g)^2 - R(x, y) \tag{5}$$

if x is the legislature's choice. The interest prefers to recruit votes to obtain x if and only if, for $y < 0$,

$$-\beta(x - z_g)^2 - \frac{\alpha}{4}(x + y)^2 \geq -\beta(y - z_g)^2,$$

or

$$z_g \geq z_g^-(x, y) \equiv \frac{x + y}{2}\left(1 + \frac{\alpha(x + y)^2}{4\beta(x - y)}\right). \tag{6}$$

Note that in (6) the interest will recruit votes only if its ideal point is to the right of the midpoint between the alternatives by a factor $(\alpha/4\beta)(x+y)^2/(x-y)$. The interests that recruit votes in client politics are thus those with preferences that are extreme by at least this factor.

This also means that there is restraint by interests in the political competition; i.e., when the agenda is exogenous, some moderate interests that could induce change in the policy will choose not to do so. This identifies a set $[0, z_g^-(x, y)]$ of interests that will not act to change the status quo. Those in this set may be referred to as *centrists*. Note that $z_g^-(x, y)$ is strictly decreasing in β, so the more intense are the policy preferences of the interest, the smaller is the centrist set. Conversely, $z_g^-(x, y)$ is strictly increasing in α, so the more intense are the policy preferences of legislators, the larger is the centrist set. There is thus a degree of inertia in the policy, and change results from the action of more extreme interests in client politics.

The right side of (6) is strictly increasing in x, so a more extreme alternative will lead some moderate interests not to attempt to change the outcome. This results from the combination of effects. First, as x increases, the number of votes that must be recruited increases. Second, the cost of recruiting a vote increases as x is farther from the ideal point of a pivotal legislator.

For $y > 0$ the expression corresponding to (6) is

$$z_g \geq z_g^+(x, y) \equiv \frac{x + y}{2}\left(1 + \frac{\alpha(x + y)}{4\beta(x - y)}\right) - \frac{\alpha y^2}{2\beta(x - y)}. \tag{7}$$

The indifference points $z_g^-(x, y)$ and $z_g^+(x, y)$ are strictly increasing in y, so a more favorable status quo leads some moderate interests not to undertake political action. The indifference point $z_g^+(x, y)$ is strictly increasing in the alternative x, unless y is very close to x.

Another perspective on the participation of interests in client politics when the agenda is fixed is to ask for a fixed y and z_g how far to the right x must be before the interest decides not to take non-market action. If $y = 0$, then for

$$x > x^*(z_g, 0) \equiv \frac{8\beta z_g}{4\beta + \alpha},$$

an interest with ideal point z_g finds the cost of achieving x to be greater than the gain. Note that $x^*(z_g, 0)$ is strictly decreasing in α and strictly increasing in β, as expected.

2.4 INSTITUTIONAL EXTENSIONS

2.4.1 SUPERMAJORITY RULE.

In the example, Federal Express and its allies had to recruit 60 votes to end the filibuster. Letting s denote the supermajority fraction of votes required, Federal Express had to obtain the votes of legislators with ideal points from $1 - s$ to $(x + y)/2$. The resources required to recruit each vote are given in (3), and the total resources required to build a supermajority s of the votes are

$$R_s(x, y) = \begin{cases} (\alpha/4)[x + y - (1 - 2s)]^2 & \text{if} \quad s \geq y, \\ (\alpha/4)(x + y)^2 - \alpha y^2 - \alpha(x - y)(\tfrac{1}{2} - s) & \text{if} \quad s < y. \end{cases} \tag{8}$$

This function is strictly increasing and strictly convex in s, so the greater the supermajority, the greater the resources required to obtain x rather than y. Supermajority rule in client politics thus makes it less likely that an interest will be active and hence that the status quo will be changed.

2.4.2 A BICAMERAL LEGISLATURE.

In a bicameral legislature, majorities (or supermajorities) must be obtained in each chamber. If the voting in each chamber is independent, the theory is applied to each chamber. That is, resources are provided to the least-costly set of pivotal legislators in each chamber. The cost is then the sum of the expressions in (4) or (8), and the interest will be active if a condition analogous to (6) is satisfied. As with supermajority rule, a bicameral legislature makes it less likely that the status quo will be changed in client politics.[15]

15. See Diermeier and Myerson (1999) for a theory of political systems with multiple hurdles.

2.4.3 A PRESIDENTIAL VETO.
In the United States two-thirds of the members of both the House and the Senate are required to override a presidential veto and enact a bill. Overriding a veto involves a straightforward application of the model of supermajority rule combined with a bicameral legislature. If the president is on the opposite side of the chamber medians from the interest, recruiting veto-proof supermajorities in each chamber can be costly. In this case an alternative strategy is to attempt to recruit the president.

2.5 AGENDA-SETTING STRATEGIES AND VOTE RECRUITMENT IN CLIENT POLITICS

The above analysis assumed that the agenda was fixed. The interest, however, may be able to influence both the agenda and the choice from that agenda. The agenda could be set by allies in the legislature with access to the agenda formation process and who have preferences similar to those of the interest. In this case, the interest may be thought of as choosing both the alternative x and the votes to recruit.

The agenda-setting strategy of the interest and its allies depends on both preferences and the status quo y. Consider first the influence of y.[16] If y is extreme ($y \leq -z_g$), the median legislator, $z_m = 0$, prefers z_g to y, so the interest's allies can set $x = z_g$ and the legislature will enact it.[17] Consequently, no resources are required to obtain a majority when the status quo y is sufficiently unattractive to the median voter. Similarly, if $y \geq z_g$, the interest's allies will set $x = z_g$, and legislature will approve it. In both these cases, agenda setting is sufficient to achieve the interest's ideal point without recruiting votes.

If $y \in (-z_g, z_g)$ the interest must trade off its policy preferences against the cost of enacting a policy. The optimal alternative $\hat{x} \in [0, z_g]$ that maximizes $U_g(x; z_g)$ will first be determined and then the domain over which it is optimal will be identified. The optimal alternative $\hat{x}$ balances at the margin the gain in terms of policy and the cost of recruiting the votes to enact that policy and is given by

$$\hat{x} = \frac{4\beta z_g - \alpha y}{4\beta + \alpha}. \tag{9}$$

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16. The influence of the status quo y on the majority-rule winner has been characterized by Romer and Rosenthal (1979). Krehbiel (1998) provides a more general theory that incorporates supermajorities.

17. This does not explain why the status quo y is so extreme. That is, the legislature might be expected to set $y = 0$ rather than allow an extreme y to persist. This issue is considered below.

This is optimal if $\hat{x} \geq y$, but if $\hat{x} < y \leq z_g$, the interest is better off with y than with $\hat{x}$, since y is closer to its ideal point and no resources need be provided to obtain y. The y^o such that $\hat{x} = y^o$ is

$$y^o = \frac{2\beta z_g}{2\beta + \alpha}, \tag{10}$$

which is less than z_g. Consequently, for $y \geq y^o$ there is no vote recruitment. As α approaches zero, y^o approaches z_g, so as legislators' policy preferences intensify the set of status quos such that vote recruitment occurs contracts.

The optimal alternative x^* is thus

$$x^* = \begin{cases} z_g & \text{if} \quad y < -z_g, \\ \hat{x} & \text{if} \quad -z_g \leq y \leq y^o, \\ y & \text{if} \quad y^o < y \leq z_g, \\ z_g & \text{if} \quad y > z_g. \end{cases} \tag{11}$$

The policy x^* enacted thus is either the interest's ideal point z_g when the status quo is extreme, or a point to the left of its ideal point. In the latter case the interest makes concessions (a lower x) to reduce the resources required to recruit the votes needed to enact x.

The outcome x^* depends on the alternative y. In a legislature with a median ideal point of zero, the alternative y would, in the absence of other considerations, be $y = 0$, in which case $x^* = 4\beta z_g/(4\beta + \alpha) < z_g$. The outcome then depends on the preferences of both the legislators and the interest, and the interest does not obtain its most-preferred outcome.

The policy x^* in (11) is (weakly) decreasing in the intensity α of the preferences of legislators, since the marginal resources required to recruit a vote to enact x are increasing in the parameter. In the limit as α increases, x^* goes to $z_m = 0$, and the interest has no influence. Similarly, as β increases, the policy approaches the ideal point of the interest. Consequently, the more intense are the preferences of the legislators (the larger is α), the less influence the interest has. Similarly, the more intense are the interest's policy preferences, the more favorable is the policy. Vote recruitment and agenda-setting strategies are thus complements in the sense that an increase in α or a decrease in β results in both a more moderate agenda and fewer votes recruited.

Krehbiel's (1998, 1999) theory of pivotal politics pertains to majoritarian politics in which interests are not active. In that theory, gridlock results when the status quo is between the median legislator's ideal point and either the filibuster pivot or the presidential veto pivot. As the Federal Express example illustrates, a vote-recruitment strategy by an interest can result in a policy change even if the status quo

is in the gridlock interval. Conversely, even if there were no filibuster and no presidential veto, in which case the gridlock interval would be the median ideal point, there could be no policy change even if an interest were present. In client politics with a fixed alternative x, a status quo $y = 0$ will be immune to change if the interest has an ideal point $z_g \in [0, z_g^+(x, 0)]$, where $z_g^+(x, 0)$ is given in (7). If the interest, however, has allies in the legislature and can select the alternative x, policy change always occurs when $y \leq y^o$.

To determine whether an interest will participate in client politics when the agenda can be set, note that x^* satisfies the participation constraint for $y \leq y^o$. Consequently, all interests will participate when the status quo is at or to the left of y^o. That is, unless the status quo is already favorable to the interest, client politics results in a policy change. The alternative y^o is strictly increasing in z_g, so more extreme interests will participate for some status quos for which moderate interests will not participate. Moreover, when an interest participates, the policy outcome is increasing in z_g, so more extreme interests have greater absolute influence than less extreme interests.

2.6 IMPERFECT INFORMATION

The equilibria characterized above are based on the assumption that the interest knows the preferences of legislators and hence can provide the minimum resources required to recruit a legislator's vote. In the face of imperfect information about preferences, however, an interest may recruit more votes or provide more resources to obtain a vote than it would with perfect information.

2.6.1 THE LOCATION OF IDEAL POINTS. To illustrate the effect of imperfect information, suppose that legislators are identified by their basic preferences represented by z, but for a specific issue their preferences can differ. To provide a tractable example, let the ideal points be $z + \tilde{\gamma}$, where $\tilde{\gamma}$ is an unknown component of all legislators' preferences.[18] This could correspond, for example, to incomplete information about constituent's preferences for government-provided health care or a change in trade policy. Let $\tilde{\gamma}$ have support $[\gamma_1, \gamma_2]$, mean $E\tilde{\gamma} = 0$, and density and distribution functions denoted by $f(\gamma)$ and $F(\gamma)$, respectively. Also, let $y = 0$.

The sequence of play is that the interest first offers resources, then the realization of the random variable occurs, and legislators vote. Since z is common knowledge, the resources can be targeted to particular legislators. To identify the strategy of the interest, suppose that the resource $r^*(x, y; z)$ in (3) are offered. Then, if the realization

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18. The order of the ideal points is thus invariant to the realization of $\tilde{\gamma}$.

is $\gamma > 0$, the offer $r^*(x, y; z)$ to the pivotal legislators $z \in [0, x/2]$ is greater than that required to induce z to vote for x. If the realization is $\gamma < 0$, the offer is insufficient to obtain any of the votes in the pivotal set. From an *ex ante* perspective the probability of x being enacted is thus $F(0)$. If the interest prefers a higher probability of success, it must offer a resources schedule $r_z(x, 0; z)$ indexed by $z^* \geq 0$ where

$$r_z(x, 0; z) = \begin{cases} 0 & \text{if} \quad z < 0, \\ \alpha x & \text{if} \quad 0 \leq z < z^*, \\ 2\alpha\left(x/2 + z^* - z\right) & \text{if} \quad z^* \leq z < x/2 + z^*, \\ 0 & \text{if} \quad x/2 + z^* \leq z. \end{cases}$$

The parameter z^* represents the shift in the resources schedule in response to the imperfect information, and $2\alpha z^*$, capped at αx, is the additional resources provided to recruited legislators. Then, x will be enacted if $\gamma \geq -z^*$, or with probability $1 - F(-z^*)$.

The resources $R(z^*)$ are

$$R(z^*) = \alpha x z^* + \frac{\alpha}{4} x^2.$$

If the offers are conditional on both the vote of a legislator and on x being enacted, the expected utility EU_g of the interest is

$$EU_g = \left(-\beta(x - z_g)^2 - \alpha x z^* - \frac{\alpha}{4} x^2\right)[1 - F(-z^*)] - \beta z_g^2 F(-z^*).$$

The first-order conditions when allies in the legislature can set the agenda are

$$\frac{\partial EU_g}{\partial z^*} = -\alpha x[1 - F(-z^*)] + f(-z^*)$$

$$\times \left(\beta z_g^2 - \beta(x - z_g)^2 - \alpha x z^* - \frac{\alpha}{4} x^2\right) = 0,$$

$$\frac{\partial EU_g}{\partial x} = \left(-2\beta(x - z_g) - \alpha z^* - \frac{\alpha}{2} x\left(1 - F(-z^*)\right)\right) = 0.$$

For the case in which $\tilde{\gamma}$ is uniformly distributed on $[-\gamma_1, \gamma_2]$, the optimal strategy $(\tilde{z}^*, \tilde{x}^*)$ for the interest is

$$\tilde{z}^* = \frac{2(\beta z_g - \alpha \gamma_2)}{3\alpha}, \tag{12}$$

$$\tilde{x}^* = \frac{4(2\beta z_g + \alpha \gamma_2)}{3(4\beta + \alpha)}. \tag{13}$$

The policy is increasing in γ_2, so the interest seeks a more favorable policy when it is more uncertain about the location of legislator's ideal points. The greater is the uncertainty about preferences, however, the lower is the probability of winning, since z^* is decreasing in γ_2.[19] The probability of success is increasing in the intensity of its preferences and decreasing in the intensity of preferences of the legislators.

The optimal $\tilde{z}^*$ is positive if $\beta z_g - \alpha\gamma_2 > 0$, which reflects the strength of the interest's preferences, the cost of recruiting votes, and the extent of the imperfect information. The optimal $\tilde{z}^*$ is strictly increasing in β and z_g and is strictly decreasing in α, so the stronger are the incentives of the interest, the greater is the number of votes recruited and the higher the probability of x being enacted. Conversely, the more intense are the policy preferences of the legislators, the more costly is vote recruiting. Fewer votes are then recruited, and the probability of $\tilde{x}^*$ being enacted is lower.

The optimal policy $\tilde{x}^*$ in (13) is strictly increasing in z_g, so more extreme interests seek a higher policy. The comparative statics with respect to the preference intensity parameters are

$$\frac{d\tilde{x}^*}{d\beta} = -\frac{\beta}{\alpha}\frac{d\tilde{x}^*}{d\alpha} = \frac{8\alpha(z_g - 2\gamma_2)}{3(4\beta + \alpha)^2}.$$

If information about legislators' preferences is fairly accurate (γ_2 low), more intense preferences of the interest increase and of the legislators decrease the policy sought by the interest. If information is very imperfect, the opposite response occurs. Thus, more extreme interests have "normal" responses to the intensity of preferences, whereas moderate interests have the opposite responses. Interests such as Federal Express have a strong incentive to learn the preferences of legislators, in which case γ_2 will be small. Then, more intense policy preferences of an extreme interest result in both more vote recruiting and a more extreme policy objective, whereas for a moderate interest more votes are recruited, but to reduce the cost of vote recruiting a more moderate policy is sought.

This extension of the model indicates that the amount of nonmarket action, vote recruiting in this case, can be greater when there is imperfect information about the ideal points of legislators. In particular, more vote recruiting takes place the more extreme is the interest, the more intense are its preferences, and the less costly are votes. The probability of $\tilde{x}^*$ being enacted inherits the same qualitative properties. If $\tilde{x}^*$ is enacted, it can receive a supermajority depending on

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19. Note that for $\gamma_2 = 0$, (13) reduces to (9). Also, note that z^* does not go to zero as γ_2 goes to zero, since in this example resources are provided only if the alternative wins.

the realization γ. That is, the interest provides insurance *ex ante*, but *ex post* may have overrecruited. This extension of the model thus provides as explanation for supermajorities and excess vote recruitment.

2.6.2   THE INTENSITY OF PREFERENCES.   As another example of the effects of imperfect information, suppose that the intensity α of the legislators' preferences is not precisely known. In this case, the interest still prefers to recruit the votes of legislators with $z \in [0, (x+y)/2]$, and if it provided resources $r = 2\phi((x+y)/2 - z)$, as in (3), all legislators $z \in [0, (x+y)/2]$ would vote for x if $\phi \geq \alpha$, and otherwise would vote for y and not receive the resources. Then, if the distribution of α is given by a density function $f(\alpha)$ with support $[0, \alpha^+]$, where the corresponding distribution function is $F(\alpha)$, the probability is $F(\phi)$ that a resources function with parameter ϕ results in enactment of x at a cost $(\phi/4)(x+y)^2$. The expected utility Eu_g of the interest is then

$$Eu_g = -\int_0^\phi \left(\beta(x - z_g)^2 + \frac{\phi}{4}(x+y)^2 \right) f(\alpha)\, d\alpha - \int_\phi^{\alpha^+} \beta(y - z_g)^2 f(\alpha)\, d\alpha$$

$$= -F(\phi)\left(\beta(x - z_g)^2 + \frac{\phi}{4}(x+y)^2 \right) - [1 - F(\phi)]\beta(y - z_g)^2.$$

The optimal ϕ^* satisfies

$$\beta(2z_g - x - y)(x - y) - \frac{1}{4}(x+y)^2\left(\phi^* + \frac{F(\phi^*)}{f(\phi^*)} \right) = 0,$$

provided ϕ^* is less than or equal to α^+. Otherwise, $\phi^* = \alpha^+$. If the allies of the agenda setter can set the agenda, the optimal proposal is

$$x^*(\phi) = \frac{4\beta z_g - \phi y}{4\beta + \phi}.$$

As an example, if α is uniformly distributed on $[0, \alpha^+]$ and $y = 0$, the optimal ϕ^* is $\phi^* = \alpha^+$. Then $x^*(\phi^*) = 4\beta z_g/(4\beta + \alpha^+)$, and it is enacted with probability one. As another example, if $f(\alpha) = (2/\alpha^+)(1 - \alpha/\alpha^+)$ and $y = 0$, then

$$\phi^* = 4\left(\sqrt{4\beta^2 + 2\beta\alpha^+} - \beta \right). \tag{14}$$

For example, if $\alpha^+ = 2$ and $\beta = 1$, $\phi^* = 4(\sqrt{2} - 1) \approx 1.657$ and $x^* = 0.707 z_g$. The probability that x^* will be enacted then is $F(\phi^*) = (\phi^*/4)(4 - \phi^*) = 0.97$.

The optimal ϕ^* in (14) is a strictly increasing function of α^+, but the probability that x^* will be enacted is a strictly decreasing function of α^+ with a limit of zero as α^+ increases. Consequently, as information about legislators' policy preferences become more imperfect, the

interest offers more resources, but the probability that the policy x^* is enacted decreases. Also, x^* is strictly decreasing in α^+, so the interest moderates its policy goals as information becomes more imperfect.

One normative implication of these extensions of the model is that the interest has an incentive to learn the preferences of legislators. This may be accomplished by developing relationships with legislators, by studying their constituencies, or by hiring well-informed consultants and lobbyists with established relationships. Learning about legislators' preferences can both reduce the resources required and increase the probability that a more favorable policy is enacted.

2.7 WHO HAS THE BARGAINING POWER?

The initiative for the provision of politically valuable resources to recruit votes may come from either the interest or the legislature. The two principal factors affecting who initiates the vote recruitment are awareness of the issue and the locus of power in the interest-group–legislature relationship. In some cases, the interest may be aware of an issue affecting it and may initiate vote recruitment. In other cases, the legislator may recognize the issue and solicit resources from the interest. The resources thus may be offered by the interest or demanded by the legislators.

The bargaining power in the relationship depends on a number of factors. There are many interests and relatively few legislators. There are even fewer legislators with centrally located policy preferences who would be the natural focus of vote recruitment.[20] On the one hand, there is some theory (Ferejohn, 1986, Proposition 6; Helpman and Persson 1998) that suggests that legislators in a majority-rule institution where utility is transferable will compete for resources from a client and drive the amount they receive down to zero. That is, the bargaining power of legislators could be reduced to the extent that an interest can play one legislator off against another. This suggests that an interest might want to recruit more than the minimal number of pivotal voters so as to reduce the bargaining power of any one legislator.

On the other hand, suppose that the bargaining could lead to a legislator $z \in [0, (x + y)/2]$ holding out. In that case the interest would turn to the next voter just to the left of $z_m = 0$. For example, if $y < 0$, then the resources required to recruit that voter are $r^*(x, y; z) = 2\alpha[(x + y)/2 - z]$, and the infimum on $z \in [-\frac{1}{2}, 0)$ is $r^*(x, y; 0) = \alpha(x + y)$. If the interest had to provide these resources to

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20. The bargaining power of legislators may be greater in interest-group politics than in client politics, since the pivotal legislators can play one interest off against another.

each $z \in [0, (x + y)/2]$, the total resources $\bar{R}$ to recruit the pivotal set would be $\bar{R} = (\alpha/2)(x + y)^2$, which is twice that in (4).[21] The optimal policy $\bar{x}$ then is $\bar{x} = (2\beta z_g - \alpha y)/(2\beta + \alpha)$, which has the same comparative-statics properties as $\hat{x}$ in (9).

Even if the pivotal legislators have all the bargaining power, the policy may still be shifted in the direction of the interest. Suppose, for example, that a single legislator has all the bargaining power and controlled the agenda. The legislator thus can extract the entire surplus S of the interest, or $S = U_g(x; z_g) - U_g(y; z_g)$. The legislator then chooses the policy x_L according to

$$x_L \in \arg\max_{x} -\alpha \mid x - z \mid +S,$$

which yields

$$x_L = z_g - \frac{\alpha}{2\beta}.$$

The interest thus has influence over policy, but the legislator extracts all the surplus.

2.8 Incentives to Organize for Nonmarket Action

The analysis of majority-building strategies also identifies the incentives to organize for nonmarket action. Substituting $\hat{x}$ from (9) into $U(x; z_g)$ in (5) yields for $y \le 0$

$$U_g(\hat{x}; z_g) = -\frac{\alpha\beta}{4\beta + \alpha}(y + z_g)^2,$$

which is the interest's utility from the enactment of its optimal alternative. The interest's gain G relative to taking no action (i.e., the policy remains at the status quo) is

$$G = U_g(\hat{x}; z_g) + \beta(y - z_g)^2$$

$$= -\frac{\alpha\beta}{4\beta + \alpha}(y + z_g)^2 + \beta(y - z_g)^2.$$

Consequently, if G is greater than the cost of organizing for nonmarket action, the interest will be active. The gain is a strictly decreasing function of the intensity α of the legislators' policy preferences, so the stronger are legislators' policy preferences the smaller is the incentive for the interest to organize for nonmarket action. Conversely,

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21. See Snyder (1991) for an analysis of this case in a related model.

interests with more intense policy preferences are more likely to be active; i.e.,

$$\frac{dG}{d\beta} = \frac{1}{(4\beta + \alpha)^2}\{[(4\beta + \alpha)^2 - \alpha^2](z_g^2 + y^2) - 2z_g y[(4\beta + \alpha)^2 + \alpha^2]\},$$

which is positive for $y \leq 0$.

The incentive G is a strictly increasing function of z_g for $y \leq 0$, since

$$\frac{dG}{dz_g} = -\frac{2\beta}{4\beta + \alpha}[2\alpha y + 4\beta(y - z_g)].$$

More extreme interests thus have a stronger incentive to take nonmarket action. The gain is a strictly decreasing function of the status quo y, so the closer the status quo is to the interest's ideal point, the smaller is the incentive to organize for nonmarket action. This analysis suggests that interests with more extreme and more intense preferences have the strongest incentive to organize to influence legislative outcomes. Consequently, moderate interests may be inactive, contributing to policy inertia. This suggests that when the cost of organizing interests is high in client politics, those policy changes that occur are large and are driven by more extreme interests. When the costs of organizing are low, policy changes should be closely responsive to the preferences of the affected interests.

2.9 PRINCIPLES OF NONMARKET STRATEGY: CLIENT POLITICS AND MAJORITY-RULE INSTITUTIONS

The theory of majority building and vote recruitment in majority-rule institutions identifies principles for nonmarket strategy in client politics and predictions of which interests will be active on an issue. The normative implications of this theory guide the selection of a strategy and its implementation. The positive implications predict the circumstances under which an interest will deploy a nonmarket strategy as well as the amount of politically valuable resources expended and to whom they are provided. The positive implications can alert an interest to the likelihood that an opposing interest will initiate action that may need to be countered by the interest. If the agenda is fixed and $(x + y)/2 \leq z_m < z_g$, the legislature will choose x in the absence of a nonmarket strategy, so the interest can be inactive. The theory predicts, however, that an interest on the other side may initiate nonmarket action, in which case interest-group competition may result.

The theory also suggests that interests with more extreme preferences are more likely to be active in client politics than are interests with centrist preferences. Interests will attempt to influence both

the setting of the agenda and the voting on the agenda, and more extreme interests will obtain more extreme outcomes. If an interest is active, it will provide resources to the least-costly set of pivotal legislators, and those legislators are the ones who are mildly opposed to the alternative sought by the interest. The resources provided are an increasing function of the intensity of legislators' preferences and the extent to which they prefer the status quo to the alternative sought by the interest.

From a normative perspective, several principles for majority-building and vote recruitment strategies are implied by the theory. First, legislators who prefer x to y will vote for x even in the absence of the provision of politically valuable resources. The interest thus need not provide resources to its allies.[22] Second, the interest should waste neither time, attention, nor resources on those legislators who are strongly opposed to x. Their votes are too costly. Third, resources should be provided only to the least-costly set of pivotal legislators, i.e., those with ideal points in $[z_m, (x+y)/2]$. Attention thus should be directed to those legislators in the middle, i.e., those who are mildly opposed to x. Fourth, more resources must be provided the more opposed a pivotal legislator is. With simple majority rule the greatest resources must be provided to the median legislator. Similarly, more resources must be provided the more intense are the policy preferences of legislators. Fifth, with perfect information only enough votes to create a minimal majority need be recruited, but with imperfect information about legislators' preferences, or if a supermajority is required as in the Federal Express case, more votes are recruited. Sixth, agenda-setting strategies are important, and the interest should encourage its allies to set a favorable alternative but not one that is too costly to enact. Unless the alternative y is extreme ($-y < z_g$ or $y \geq z_g$), the interest and its allies will make compromises between its policy preferences and the cost of building a majority. The interest thus does not generally seek or obtain its most-preferred policy. Moreover, the more intense are the pivotal legislators' policy preferences, the weaker is the interest's influence. Seventh, the more distant is the alternative y from z_m, the greater are the interest's agenda-setting opportunities, and hence the interest can obtain an alternative closer to its ideal point. The legislature, however, would be expected to set $y = z_m$.

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22. There might be other reasons to provide resources to allies, such as inducing a legislator to put the alternative x^* on the agenda. Similarly, resources might be provided to gain access for lobbying or to encourage the recipient to work on behalf of the interest by lobbying other legislators or by trading his vote on other issues for a vote by another legislator on the issue of concern to the interest.

3. COALITIONS AND RENT-CHAIN MOBILIZATION

3.1 SPREADING THE COST OF VOTE RECRUITMENT

The effectiveness of an interest's nonmarket strategy can depend on its size. Size can reduce the per capita costs of implementing a nonmarket strategy. A larger interest group may also be able to supply more politically valuable resources such as votes, campaign contributions, lobbying, and grassroots action. Interests thus can have an incentive to form coalitions with those with aligned interests and to expand the size of coalitions. An alignment of interests provides the potential for collective action, but the actuality of collective action depends on the ability of the interests to resolve the free-rider problem and to agree on a rule for sharing the cost of recruiting votes. This section assumes that the interests have solved the free-rider problem and agreed on a sharing rule and focuses on enlisting interests to participate in the collective action.

When x is a public good with exclusion to group members, enlisting another member reduces the per capita cost of recruiting votes. For example, let the per capita cost be $(1/n)R$, where n is the number of members, all of whom are assumed to have the same preferences. Then, for the case of a fixed agenda $A = \{x, y\}$, an interest will take nonmarket action if and only if, for $y \leq 0$,

$$-\beta(x - z_g)^2 + \beta(y - z_g)^2 - \frac{\alpha}{4n}(x + y)^2 \geq 0,$$

or if and only if $n \geq \hat{n}$, where the critical group size $\hat{n}(x, y; z_g)$ is[23]

$$\hat{n}(x, y; z_g) = \frac{\alpha(x + y)^2}{4\beta(x - y)[2z_g - (x + y)]}.$$

A positive implication of this extension of the vote-recruitment model is that small interest groups are less likely to be active on an issue with a fixed agenda than are large interest groups, since large groups can spread the cost of nonmarket action more broadly.

If the interest group and its allies in the legislature can set the agenda, the optimal policy $x^*(n)$ is

$$x^*(n) = \frac{4\beta n z_g - \alpha y}{4\beta n + \alpha} \qquad \text{if } -z_g \leq y \leq y^o(n), \tag{15}$$

where $y^o(n)$ is defined in a manner analogous to y^o in (10). The effect

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23. If the benefits also depend on group size, the interest group or coalition will take nonmarket action if and only if $-n\beta(x - z_g)^2 + n\beta(y - z_g)^2 - (\alpha/4n)(x + y)^2 \geq 0$, and the critical size $\bar{n}(x, y; z_g)$ is given by $\bar{n}(x, y; z_g) = \hat{n}(x, y; z_g)^{1/2}$.

of interest-group size on $x^*(n)$ is given by

$$\frac{dx^*(n)}{dn} = \frac{4\beta\alpha(z_g + y)}{(4\beta n + \alpha)^2},$$ (16)

which is positive. An increase in interest-group size that reduces the marginal cost of recruiting votes thus leads the group to compromise less on the policy. That is, larger interest groups obtain more extreme policies.

Next, suppose that the interests may have different ideal points z_g^i and each prefers the alternative x to y. If the coalition can set the agenda x and if coalition member i has quadratic preferences with ideal point $z_g^i \geq -y$, the optimal alternative maximizes the aggregate utility of the coalition. When all interest groups share equally in the cost, the optimal policy $\hat{x}^r$ analogous to (15) is

$$\hat{x}^r = \frac{4\beta n\bar{z} - \alpha y}{4\beta n + \alpha},$$ (17)

where $\bar{z} = (1/n) \sum_{i=1}^{n} z_g^i$. As a member of a coalition, an interest compromises its policy preferences in exchange for a broader sharing of the cost of enacting the coalition's preferred alternative. The alternative $\hat{x}^r$ has the same properties as the alternatives in (15).

The positive prediction of this analysis is that larger interest groups obtain outcomes closer to their ideal points. A normative implication for nonmarket strategy is that an interest should work to increase the number of interests participating in the nonmarket action. Coalition building is thus an important nonmarket strategy. An interest participating in a coalition benefits in two ways. First, its cost of recruiting the needed votes for x is reduced. Second, the lower marginal cost of vote recruitment leads the coalition and its allies to choose a more favorable alternative. If the interests have different but aligned preferences, the alternative supported is based on the mean ideal point.

3.2   THE RENT CHAIN AND INFLUENCE

Baron (1995a, 2000a) introduced the concept of a rent chain to capture the potential for strengthening a nonmarket strategy by enlisting those who earn rents from their interactions with an interest.[24] In the case of a firm, rents are earned not only by shareholders but also by employees, suppliers, distributors, retailers, communities affected by

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24. The concept of the rent chain was developed for the formulation of nonmarket strategies by firms, but it applies more broadly to other interests as well. The term interest will be retained in this section.

the firm's activities, and alliance partners. The rent chain is important not only because it provides a potential for reducing the per capita cost of nonmarket action, but also because it can contribute to a majority-building strategy by reducing the reservation values of pivotal legislators. Particularly, for political systems with representation by districts and weak parties as in the United States, the location of rentholders in a district can strengthen a nonmarket strategy by providing *coverage*. Coverage refers to the location of rentholders across legislative districts and contributes to a majority-building strategy by increasing the number of legislators whose constituents are affected.

Mobilizing components of the rent chain to demonstrate to a legislator that her constituents would be better off with x than with y can reduce her reservation value. Mobilization provides four benefits to the interest. First, some legislators who initially preferred y now prefer x, so fewer votes need be recruited. Second, for those votes that still must be recruited, their cost can be lower. Third, reducing the cost of recruiting votes results in a more favorable alternative x put on the agenda. Fourth, the lower cost of vote recruitment can result in more insurance and a higher probability of winning when information about legislators' preferences is imperfect. Consequently, rent-chain mobilization, vote recruitment, and agenda setting are complements.

Mobilizing a rent chain can strengthen a nonmarket strategy in a number of ways. First, it adds numbers to the interest's side of the issue. At a minimum this spreads the costs of implementing a market strategy, and it may also strengthen the influence of the interest in a nonmarket campaign. Second, rentholders can provide resources directly in the form of letter writing, personal lobbying, volunteer work on a reelection campaign, campaign contributions, and votes in an election. Third, mobilizing a rent chain, and hence informing the constituent base, may provide the legislator an opportunity to claim credit for providing benefits to constituents. Fourth, the members of the rent chain may be able to provide information useful to the legislator. That information may be about the intensity of their preferences and how they are likely to vote. Fifth, even if an interest is unable to mobilize its rent chain, it may be able to represent the interests of rentholders before legislators. For example, an interest may identify the number of jobs in a district that would be affected by the alternative. In the case of a firm this includes not only those jobs that might be lost at its facilities but also jobs that might be affected at suppliers, distributors, and retailers. Many firms develop information on their rentholders by legislative district for this purpose.[25]

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25. A number of firms provide mobilization services and can target grassroots activities by state or by matching zip codes to congressional districts.

Mobilizing the members of the rent chain, however, can have costs. First, to include a rent-chain member, an interest may have to make concessions or compromises regarding the alternative supported, as indicated in (17). Second, rentholders may have an incentive to free-ride on the efforts of the interest. Third, the members of a rent chain may not have perfectly aligned interests and may pursue their own interests, reducing the effectiveness of the nonmarket strategy.

3.3 RENT-CHAIN MOBILIZATION AND MAJORITY BUILDING IN CLIENT POLITICS

To implement a rent-chain mobilization strategy, an interest may have to lower the cost of nonmarket action of rentholders or mitigate a free-rider problem. To illustrate this, suppose the interest can mobilize its rent chain and generate coverage in individual legislative districts through the constituency connection. Let the extent to which rentholders are mobilized be denoted by ρ, and assume that ρ represents a reduction in the reservation value of legislators. The set of pivotal legislators is thus $[0, (x + y - \rho)/2]$, so fewer votes need be obtained. Indeed, if $\rho \geq x + y$, mobilizing the rent chain is sufficient to obtain x.

When mobilizing the rent chain is not sufficient, some votes must be recruited. The resources $\bar{r}(x, y; z)$ analogous to (3) that must be provided to z are then, for $y \leq z \leq (x + y - \rho)/2$ and $y \leq 0$,[26]

$$\hat{r}(x, y; z) = 2\alpha \left(\frac{x + y - \rho}{2} - z \right). \tag{18}$$

The total resources $\widehat{R}(x, y)$ are

$$\widehat{R}(x, y) = \frac{\alpha}{4}(x + y - \rho)^2. \tag{19}$$

These resources are a strictly decreasing function of ρ, so mobilizing the rent chain can reduce both the number of votes that must be recruited and the resources that must be provided to the remaining pivotal voters.

Rent-chain mobilization can also affect an agenda-setting strategy. The optimal alternative $\hat{x}_m$ is, for $-z_g + \rho \leq y \leq \hat{y}^{\mathrm{o}} = (4\beta z_g + \alpha\rho)/(4\beta + 2\alpha)$,

$$\hat{x}_m = \frac{4\beta z_g - \alpha(y - \rho)}{4\beta + \alpha}. \tag{20}$$

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26. The reservation value is specified as $U(y; z) - U(x - \rho; z)$, which yields (18). If rent chain mobilization shifts the ideal points of legislators, the reservation value is $U(y; z + \rho) - U(x; z + \rho)$, and the resources $\hat{r}$ are $\hat{r}(x, y; z) = 2\alpha[(x + y)/2 - z - \rho]$.

This is a strictly increasing function of ρ, so greater rent-chain mobilization results in a more favorable alternative. Rent-chain mobilization and agenda-setting strategies are thus complements.

3.4 OPTIMAL MOBILIZATION

Mobilizing a rent chain can be costly both directly and indirectly. The direct costs include informing components of the rent chain, reducing their costs of taking nonmarket action, and assisting in that action. The indirect costs include dissipating the willingness of rentholders to participate in future nonmarket actions. These costs also affect the mix of rent-chain mobilization, vote-recruitment, and agenda-setting strategies.

To investigate the optimal mobilization of rentholders, suppose that mobilization can be targeted to the districts of pivotal legislators, so mobilization takes place selectively.[27] The mobilization of rentholders is assumed to take place before vote recruitment, and hence the vote-recruitment and agenda-setting strategies are a function of that mobilization.

For tractability let the cost $C(\rho)$ of mobilizing rentholders be $C(\rho) = c\rho^2$, where $c > 0$, so the utility of the interest is

$$U_g = -\beta(\hat{x}_m - z_g)^2 - \frac{\alpha}{4}(\hat{x}_m + y - \rho)^2 - c\rho^2.$$

The optimal rent-chain mobilization $\hat{\rho}$ is then

$$\hat{\rho} = \frac{\alpha\beta(z_g + y)}{4\beta c + \alpha c + \alpha\beta}. \tag{21}$$

The comparative statics of the optimal mobilization are straightforward. Mobilization is decreasing in the cost c and increasing in the importance β of the policy to the interest. Mobilization is also increasing in z_g, so more extreme interests mobilize to a greater extent than do moderate interests. Similarly, the more favorable the status quo y, the greater the mobilization, since more votes must be recruited. Mobilization is also increasing in α, since the higher the reservation values of legislators, the more the interest relies on rent chain mobilization rather than vote recruitment. In this sense, providing resources for vote recruitment and investing in rent-chain mobilization are substitutes.

27. If the rents vary significantly across districts, the interest may recruit the votes of legislators with ideal points $z \notin [0, (x + y)/2]$.

The policy $\hat{x}_m$ resulting from the optimal mix of rent-chain mobilization and vote recruitment is[28]

$$\hat{x}_m = \frac{4\beta z_g - \alpha y}{4\beta + \alpha} + \frac{\alpha^2 \beta (z_g + y)}{(4\beta + \alpha)(4\beta c + \alpha c + \alpha \beta)}. \tag{22}$$

The policy is a strictly decreasing function of the cost c, so the more costly is rent-chain mobilization, the more moderate is the policy sought. A rent-chain mobilization strategy and an agenda-setting are thus complements.

The resources expended in vote recruitment are

$$\widehat{R} = \frac{4c^2}{\alpha} \hat{\rho}^2,$$

which is strictly increasing in the cost c of rent-chain mobilization.[29] Similarly, the cost of rent chain mobilization is

$$C(\hat{\rho}) = c\hat{\rho}^2,$$

which is strictly increasing in α and strictly decreasing (increasing) in c as $c > (<) \alpha\beta/(4\beta + \alpha)$. Consequently, unless the cost of rent-chain mobilization is very low, an increase in the cost c results in a substitution of vote recruitment for mobilization and less aggressive agenda setting. The interest's expenditures on the two components of its nonmarket strategy reflect this substitution.

3.5   PRINCIPLES FOR NONMARKET STRATEGY

An interest generally has an incentive to enlist others to participate in client politics. Enlisting their participation can reduce the cost of each participant, which increases the incentive to take nonmarket action and hence can lead an interest in acting on an issue when alone it would not do so. It also makes an agenda-setting strategy more aggressive, resulting in a policy closer to the ideal point of the interest. If the interests enlisted have different ideal policies, the policy supported in an agenda-setting strategy involves a compromise among the interests. A larger coalition thus compromises internally in its agenda-setting strategy but obtains a more favorable policy.

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28. The alternative $\hat{x}_m$ is strictly increasing in z_g and strictly decreasing in y, so more extreme interests obtain more extreme policies but moderate their policy objectives as the status quo improves. The effects of the intensities of the policy preferences of the interest and legislators on the alternative depend on the specific parameter values.

29. The resources $\widehat{R}$ are strictly decreasing in the intensity of the interests' policy preferences as well as in z_g. The resources $\widehat{R}$ are increasing (decreasing) in α if $4\beta c/(c + \beta) > (<) \alpha$, so as the policy preferences of legislators increase in intensity, the resources expended in vote recruitment increase and then decrease.

In addition to forming a coalition, an interest may be able to enlist its rent chain in its nonmarket strategy. A rent chain is more important if it provides targeted coverage of legislative districts and in particular the districts of legislators who are in the least-costly pivotal set. Taking advantage of the rent chain through the constituency connection can change the least-costly pivotal set, since those with substantial rents in their district will have preferences closer to those of the interest.

Rentholders may not have an incentive to take nonmarket action, so the interest may have to mobilize its rent chain. A rent-chain mobilization strategy can be used in conjunction with a majority-building strategy and can be a substitute for vote recruitment. A mobilization strategy also can affect an agenda-setting strategy and result in a more favorable policy. The optimal mix of vote-recruitment, agenda-setting, and rent-chain mobilization strategies depends on the costs of each strategy. For example, a higher marginal cost of rent-chain mobilization moderates the alternative sought and increases the resources expended in vote recruitment. That is, the interest moderates its policy objective and substitutes vote recruitment for rent-chain mobilization. Rent-chain mobilization and vote-recruitment strategies are thus substitutes, whereas rent-chain mobilization and agenda-setting strategies are complements.

4. Interest-Group Politics

4.1 Competition

In client politics an interest faces no active opposition, but on many issues opposing interests are active. Theories of nonmarket competition depend importantly on whether the interests move simultaneously or sequentially. Unless there is some natural or predictable sequence of moves, a simultaneous-move model may be appropriate. One reason a particular interest might be expected to move first, however, is that if it does not act, the government will make a decision contrary to its interests. Consequently, the initiator of a nonmarket strategy is often the interest that would be disadvantaged if the status quo were to prevail. The strategy of the other interest—the one that would be advantaged in the absence of nonmarket action—is then counteractive. The competition then can proceed sequentially. Unless the interests can commit to offers of resources, however, there may be no natural last mover.

In majority-rule institutions, theories of interest-group competition depend not only on whether the interests move simultaneously or sequentially, but also on whether the legislators accept the offers

of competing interests or whether only one offer can be accepted. In a vote-recruitment model only one offer, that of the interest favoring the alternative for which the legislator votes, is accepted. Then, if the interests move simultaneously, the interest group competition is a Colonel Blotto game.[30] If the interests move sequentially and only one offer is accepted, the models of Groseclose and Snyder, Groseclose, and Banks are appropriate. These models, however, assume that each of the competing interests makes only one offer.

In contrast, campaign contributions may be accepted from competing interests, and competing interests can provide varying degrees of support for an officeholder. Theories in which support can be accepted from both competing interests are applicable to executive institutions in which competing pressures are balanced. If both offers of support are accepted and the interests move simultaneously, two classes of models are available. One includes rent-seeking models (Hillman and Riley, 1989; Nitzan, 1994) and all-pay auctions (Baye et al., 1993, 1994), in which the expenditures or support from competing interests determines the winner. The second class is the common-agency model (Bernheim and Whinston, 1986; Grossman and Helpman, 1994), in which offers of resources (or support) determine the extent to which a single officeholder responds to the interests. The theories in the first class often assume a reduced-form contest function, such as a probability of winning the prize, that is an exogenous function of the expenditures. Common-agency models specify resources as a function of the decision of the officeholder and hence are more general than the rent-seeking and all-pay auction models. Moreover, the common-agency approach allows the agenda to be endogenous.

This section applies the common-agency approach to the decision of an executive agency. In Section 5 a model of a majority rule institution is presented in which interests compete at both the agenda-setting and voting stages of a legislative process.

4.2   Interest-Group Competition in an Executive Institution

In an executive institution, interests attempt to influence a single decisionmaker. This might, for example, represent interest-group competition over a provision in a trade agreement to be negotiated by the USTR, a rule-making action by the EPA implementing an environmental policy, or a decision by the FCC to deregulate segments of the telecommunications industry.

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30. See Shubik (1982, pp. 322–324).

Consider an executive institution with a single decisionmaker who is to choose a policy $x \in \mathscr{R}$. Two interests g and h, each with policy preferences represented by a quadratic utility function $u_j(x) = -\beta_j(x - z_j)^2$, $\beta_j > 0$, $j = g, h$, with respective ideal points $z_g > 0$ and $z_h < 0$, seek to move policy toward their ideal points. The instrument of competition is assumed to be political support for the executive, which may take the form of providing support in the legislature for the executive, supporting budget increases, or providing other politically valuable resources. The support is given by a schedule $c_j(x)$, $j = g, h$, of the policy x chosen by the executive, and each interest provides nonrefundable support; i.e., the executive retains the support of each interest that supplies it. The utility function U_j of interest j is thus

$$U_j = u_j(x) - c_j(x), \qquad j = g, h.$$

The executive is assumed to have a differentiable, quasilinear utility function $U_e(x)$ given by[31]

$$U_e(x) = u_e(x) + c_g(x) + c_h(x), \tag{23}$$

where $u_e(x)$ represents policy preferences and z is its ideal point. The executive's policy preferences may reflect personal policy preferences of the officeholder or the mandate of the agency.

Since both interests seek to influence the policy $x > 0$, neither can be expected to move before the other. Consequently, the interests are assumed to choose their support schedules simultaneously. The game sequence is thus that the interests simultaneously offer support schedules and then the executive chooses the policy x. The interests can be thought of as principals that implicitly contract with the executive for the policy, so the executive may be viewed as the common agent of the principals. Bernheim and Whinston (1986) characterize the equilibrium in a general common-agency model, and Grossman and Helpman (1994) apply the theory to the competition among interests.[32]

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31. See Dixit et al. (1997) for a discussion of quasilinear preferences in the context of partial-equilibrium and general-equilibrium models. The model considered here is partial equilibrium.
32. See also Dixit et al. (1997).

The common-agency equilibrium $(c_g^*(x), c_h^*(x), x^*)$ is defined as

$$x^* \in \arg\max_x u_e(x) + c_g^*(x) + c_h^*(x),$$

$$c_g^*(x) \in \arg\max_{c_g(\cdot)} -\left[x^*(c_g(\cdot), c_h^*(\cdot)) - z_g\right]^2 - c_g(x^*(c_g(\cdot), c_h^*(\cdot))),$$

$$c_h^*(x) \in \arg\max_{c_h(\cdot)} -\left[x^*(c_g^*(\cdot), c_h(\cdot)) - z_h\right]^2 - c_h(x^*(c_g^*(\cdot), c_h(\cdot))),$$

plus an additional condition to be presented below. If the support schedules are differentiable, the equilibrium conditions may be stated as

$$c_g'(x^*) + c_h'(x^*) + u_e'(x^*) = 0, \tag{24}$$

$$u_j'(x^*) - c_j'(x^*) + c_g'(x^*) + c_h'(x^*) + u_e(x^*) = 0, \qquad j = g, h. \tag{25}$$

The condition in (24) is the executive's optimality condition, and the conditions in (25) are Pareto optimality conditions that require that an interest and the executive cannot both be made better off by any other choice of a support schedule. Substituting (24) into (25) yields

$$u_j'(x^*) - c_j'(x^*) = 0, \qquad j = g, h, \tag{26}$$

so each interest adjusts its support schedule so that neither it nor the executive prefers a change in the policy.

Substituting (26) into (24) yields a restated first-order condition for the executive,

$$u_g'(x^*) + u_h'(x^*) + u_e'(x^*) = 0. \tag{27}$$

This implies that when choosing the policy x the executive in effect is maximizing aggregate preferences $\widehat{U}_e(x)$ given by

$$\widehat{U}_e(x) = u_g(x) + u_h(x) + u_e(x). \tag{28}$$

As induced by the support provided by the interests, the executive chooses a policy that maximizes the sum of its utility and the utilities of the interests. The equilibrium policy thus is responsive to the preferences of all three players.

There are typically many equilibria of a common-agency game, and attention is restricted here to *truthful* equilibria in which the support schedules take the form of the policy preferences of the interest plus a constant.[33] Some truthful support schedule is always a best response to any strategy of the opposing interest, so an equilibrium

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33. The support schedules are said to be truthful because they reveal the interests' preferences.

in truthful strategies always exists. In the model considered here, this means that the support schedules can be expressed as

$$c_j(x) = \tau_j + u_j(x), \qquad j = g, h, \tag{29}$$

where τ_j is a constant determined in equilibrium.

To complete the characterization of the equilibrium, the constants τ_j in (29) must be determined. Interest j prefers to set τ_j as low as possible, but if it sets it too low, the executive will ignore its support and respond only to the support provided by the other interest. If the executive were to respond only to interest j, it would choose the policy x_j given by

$$x_j \in \arg\max u_j(x) + u_e(x), \qquad j = g, h.$$

For an equilibrium in which support is accepted from both interests, the executive must prefer x^* and the support from both interests to either x_g or x_h and support for only one interest. Consequently, x_g and x_h are off the equilibrium path of play. The executive chooses x^* if and only if

$$c_g^*(x^*) + c_h^*(x^*) + u_e(x^*) \geq c_g^*(x_g) + u_e(x_g) \tag{30}$$

and

$$c_g^*(x^*) + c_h^*(x^*) + u_e(x^*) \geq c_h^*(x_h) + u_e(x_h). \tag{31}$$

Since each interest minimizes the constant in (29), solving the equalities in (30) and (31) yields

$$\tau_g = u_h(x_h) + u_e(x_h) - u_g(x^*) - u_h(x^*) - u_e(x^*), \tag{32}$$

$$\tau_h = u_g(x_g) + u_e(x_g) - u_g(x^*) - u_h(x^*) - u_e(x^*). \tag{33}$$

As an example, suppose that the executive has a utility function $u_e(x) = -\alpha(x - z)^2$. The equilibrium is then

$$x^* = \frac{\beta_g z_g + \beta_h z_h + \alpha z}{\beta_g + \beta_h + \alpha}, \qquad x_g = \frac{\beta_g z_g + \alpha z}{\beta_g + \alpha}, \qquad x_h = \frac{\beta_h z_h + \alpha z}{\beta_h + \alpha},$$

$$c_g^*(x) = \tau_g^* - \left(x - \tfrac{1}{2}\right), \qquad c_h^*(x) = \tau_h^* - \left(x + \tfrac{1}{4}\right),$$

$$\tau_g^* = -\frac{\beta_h(z - z_h)^2}{\beta_h + \alpha} + \kappa, \qquad \tau_h^* = -\frac{\beta_g(z - z_g)^2}{\beta_g + \alpha} + \kappa,$$

where

$$\kappa = (\beta_g + \beta_h + \alpha)^{-2} \{ \beta_g [\beta_h(z_h - z_g) + \alpha(z - z_g)]^2$$

$$+ \beta_h[\beta_g(z_g - z_h) + \alpha(z - z_h)]^2 + \alpha[\beta_g(z_g - z) + \beta_h(z_h - z)]^2 \}.$$

As a more specific example, let $\beta_g = \beta_h = \alpha = 1$, $z = 0$, $z_g = \frac{1}{2}$, and $z_h = -\frac{1}{4}$. Then

$$x^* = \frac{1}{12}, \qquad x_g = \frac{1}{4}, \qquad x_h = -\frac{1}{8},$$

$$c_g^*(x) = \frac{25}{96} - \left(x - \frac{1}{2}\right)^2, \qquad c_h^*(x) = \frac{1}{6} - \left(x + \frac{1}{4}\right)^2,$$

$$\tau_g^* = \frac{25}{96}, \qquad \tau_h^* = \frac{1}{6}$$

$$u_e(x^*) + c_g^*(x^*) + c_h^*(x^*) = \frac{39}{288},$$

$$u_g(x^*) - c_g^*(x^*) = -\frac{25}{96}, \qquad u_h(x^*) - c_h^*(x^*) = -\frac{1}{6}.$$

Note that the equilibrium policy favors the interest g with the more extreme policy preferences and hence the greater willingness to provide support. Also, note that the interests are both worse off in equilibrium than if neither offered support, in which case the executive would choose $x = z = 0$. Each interest, however, is better off than if it offered no support and the opposing interest offered support and obtained the opposing policy x_g or x_h.[34] The interests are in a prisoner's dilemma in which they both offer support because if one did not the other would offer support and pull the policy more strongly in its direction. Thus, each chooses a nonmarket strategy to counteract the other.

Also note that the executive is better off than if it had made its decision in the absence of support from the interest. In this common-agency equilibrium, it is thus the executive that has the bargaining power and not the interests. Indeed, the executive chooses $x^* > 0$ rather than $x = 0$, so as to extract additional support from the interests. This theory thus corresponds to one in which the executive has bargaining power (interpreted as the ability to extract rents from interests) as a result of both interest-group competition and its position as the sole policy-maker.

This theory identifies how competing interests influence policy and predicts that the interest with the stronger preferences is able to pull the policy in its direction, but the strategy of the opposing interest moderates the policy change. It also indicates that competition between interests can leave both of them worse off than if they were able to commit not to provide support. Indeed, two interests with equally extreme preferences exactly offset each other, resulting in the same policy as if both could commit not to provide support. Nonmarket strategies in interest-group competition thus can be defensive and driven by the recognition that if an interest were not to act the other side would have considerable influence on the outcome.

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34. That is, $u_g(x_h) = -\frac{25}{64}$ and $u_h(x_g) = -\frac{1}{4}$.

5. INTEREST-GROUP COMPETITION IN A
MAJORITY-RULE INSTITUTION

This section brings together the Groseclose-Snyder model of com-
petitive vote recruiting and a common-agency model of competitive
agenda setting.[35] Two competing interests attempt to influence the
agenda as well as the voting on the agenda. The support the interests
may provide can differ, but the strategy of each is to build a majority
for an alternative it favors and to influence the agenda setting.

Consider a majority-rule institution as modeled in Section 2 with
a two-stage legislative process in which an agenda is first formed
and then voted on under simple majority rule. The agenda setter is
assumed to be the median legislator or, as in the Senate, a leader who
negotiates a unanimous consent agreement that reflects the interests
of the legislature as a whole. In the House the agenda setter could be
a party leader or the median legislator who in effect sets the agenda in
anticipation of amendments that could be offered. Rather than mod-
eling the agenda-setting process, the agenda setter is assumed to be a
single actor who selects an alternative x to be voted against the status
quo y based on the preferences of the legislators as a whole.

In the agenda-setting stage the two interests offer support sched-
ules as a function of the alternative x the agenda setter puts on the
agenda. In the second stage, the legislators vote on the agenda $A =$
$\{0, x\}$, where $y = 0$ is the status quo. The status quo is assumed to
be preferred by a majority to any $x > 0$. After the agenda is set, the
interests can recruit votes by providing politically valuable resources
to individual legislators conditional on how they vote. In offering
resources, the interests move sequentially, with interest g (supporting
x) moving first by offering a resources function $r_g(x, z)$ to legislators.
Interest h, which prefers the status quo 0 to any $x > 0$, then makes an
offer $r_h(0, z)$ to legislators. Given $r_g(x, z)$ and $r_h(0, z)$, the legislators
vote on the agenda, and the winner is determined by majority rule.

In this game, interest g, which seeks a change from the status
quo, has two decisions. The first is whether to initiate the nonmarket
competition by offering support to the agenda setter, and the sec-
ond is whether to offer resources to recruit votes. Since, however, in
the absence of a resources offer a majority would vote for 0 over

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35. Helpman and Persson (1998) apply the common-agency approach to a majority-
rule legislature with the restrictions that interests and legislators are paired so that an
interest can only provide support to one legislator and that legislator can only receive
support from that interest. They find that the legislators have no bargaining power in
equilibrium. Dharmaphala studies interest-group competition in a majority-rule legisla-
ture where interests can provide support to any legislator. One legislator is a monopoly
agenda setter, and in equilibrium the interests only contribute to the agenda setter. In
the model presented here, other legislators receive support in equilibrium.

any $x > 0$, g will initiate nonmarket action at the agenda-setting stage only if it is willing to recruit the votes to enact x. Interest h also has two decisions. The first is whether to oppose g at the agenda-setting stage, and the second is whether to recruit votes in the voting stage. The model presented next is intended to be illustrative, and a general analysis awaits future research.

5.1 THE VOTE-RECRUITING STAGE

The opposing interest h is advantaged at the vote-recruiting stage, since it can target its resources to obtain the least-costly majority to defeat an $x > 0$. This means that to enact $x > 0$ the initiator g must make every majority of votes sufficiently costly that h will not attempt to recruit votes.[36] A vote recruitment strategy with this property is said to be a *majority protection strategy*.[37]

To make every majority too costly to h, interest g may prefer to build a supermajority (recruit more than a minimal majority of votes). Thus, if defeating the optimal vote-recruitment strategy of the interest g requires more resources than h is willing to provide, h will not recruit. If g is unwilling to provide sufficient support to cause h to be inactive, interest g remains inactive and the status quo prevails. The equilibrium is thus either (1) that the initiator has sufficiently strong preferences that it is willing to provide sufficient support that the defender of the status quo is inactive and hence x is chosen by the legislature, or (2) the initiator is not willing to provide sufficient resources to deter the defender, in which case both interests are inactive and the status quo prevails.

The reservation value $\theta(x; z)$ of legislator $z \in [-\frac{1}{2}, \frac{1}{2}]$ for voting for $x > 0$ over $y = 0$ is

$$\theta(x; z) = \begin{cases} -\alpha x & \text{if } z \leq 0, \\ \alpha(x - 2z) & \text{if } 0 \leq z \leq x, \\ \alpha x & \text{if } z \geq x. \end{cases}$$

The opposing interest h will recruit the least-costly majority, so the optimal strategy for g is to make every majority of votes prohibitively expensive to h. This means that g must equalize the reservation values of all voters in the interval $[z^o, \frac{1}{2}]$, where $z^o < 0$ is to be determined.[38] Otherwise, h could select the least expensive $-z^o$ votes in that interval

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36. This feature of the equilibrium is a consequence of the finite number of moves in the model. If the horizon were unbounded, equilibria would not need to have this feature. See Baron (2000b).

37. See Baron (1999).

38. Groseclose and Snyder refer to this as a leveling strategy.

to build a majority with the votes in $[-\frac{1}{2}, z^o]$. This means that g must make those votes more expensive than h's willingness w_h to pay for 0 over x, which, given a utility function $u_h(x; z) = -\beta_h|x - z_h|$, is[39]

$$w_h = -\beta_h|0 - z_h| + \beta_h|x - z_h| = \beta_h x. \tag{34}$$

Let $\alpha\eta$ denote the resources g offers to recruit the vote of a legislator with $z \leq 0$, so those legislators have utilities $\bar{\theta}(x; z) = \alpha(-x+\eta)$. Consequently, η must be greater than x. The total cost to h of recruiting $-z^o$ votes is then $-\alpha z^o(\eta - x)$, and h will be unwilling to provide this amount if from (34)

$$-\alpha z^o(\eta - x) \geq w_h = \beta_h x. \tag{35}$$

Interest g thus can preclude h from successfully recruiting votes, and hence obtain passage of x, by choosing η and z^o to satisfy (35).

The following analysis will be conducted for $x \leq \frac{1}{2}$ to illustrate the analysis in a straightforward manner. The resources schedule offered by g is then

$$r_g(x, 0, z) = \begin{cases} 0 & \text{if} \quad z < z^o, \\ \alpha\eta & \text{if} \quad z^o \leq z < 0, \\ \alpha(\eta - 2z) & \text{if} \quad 0 \leq z \leq \min\{\eta/2, x\}, \\ \alpha \max\{0, \eta - 2x\} & \text{if} \quad z \geq \min\{\eta/2, x\}, \end{cases} \tag{36}$$

and the total resources $R_g(x, 0)$ are

$$R_g(x, 0) = \int_{z^o}^{0} \alpha\eta \, dz + \int_{0}^{\min\{\eta/2, x\}} \alpha(\eta - 2z) dz$$

$$+ \int_{\min\{\eta/2, x\}}^{1/2} \alpha \max\{0, \eta - 2x\} \, dz$$

$$= \begin{cases} -\alpha z^o \eta + \alpha\eta^2/4 & \text{if} \quad \eta/2 < x, \\ \alpha\eta(\frac{1}{2} - z^o) + \alpha x^2 - \alpha x & \text{if} \quad \eta/2 \geq x. \end{cases} \tag{37}$$

Minimizing $R_g(x, 0)$ implies that (35) holds as an equality. Solving the equality in (35) for z^o yields

$$z^o = -\frac{\beta_h}{\alpha} \frac{x}{\eta - x}.$$

Substituting z^o into (37) and minimizing with respect to η yields the

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39. An absolute-value utility function is assumed in the interest of tractability.

optimal support $\hat{\eta}$ given by

$$-\beta_h x^2 + \frac{\alpha}{2}\hat{\eta}(\hat{\eta} - x)^2 = 0 \qquad \text{if} \quad 2\beta_h < \alpha,$$

$$\hat{\eta} = x\left[1 + \left(\frac{2\beta_h}{\alpha}\right)^{1/2}\right] \qquad \text{if} \quad 2\beta_h \geq \alpha. \tag{38}$$

In the interest of tractability in the subsequent analysis the parameters will be assumed to satisfy $2\beta_h \geq \alpha$, which corresponds to the case in which h has intense policy preferences. Then, the optimal $\hat{z}^o$ is

$$\hat{z}^o = -\left(\frac{\beta_h}{2\alpha}\right)^{1/2},$$

which is in the support of z only if $2\beta_h \leq \alpha$. This implies that if $2\beta_h \geq \alpha$, then $\hat{z}^o = -\frac{1}{2}$, and from (35) the optimal $\hat{\eta}$ is

$$\hat{\eta} = x\left(1 + \frac{2\beta_h}{\alpha}\right). \tag{39}$$

Consequently, if $2\beta_h \geq \alpha$, interest g provides support to all legislators. Note that $\hat{\eta} > x$, reflecting the bargaining power of legislators when interests compete for their votes.

The minimum resources $R_g^*(x, 0)$ required to enact x are thus

$$R_g^*(x, 0) = \alpha x^2 + 2\beta_h x \qquad \text{if} \quad 2\beta_h \geq \alpha. \tag{40}$$

Note that the larger the policy change or the more intense are the policy preferences of legislators and the opposing interest group, the greater are the resources that must be provided. The utility of g if x is enacted in the voting stage is thus

$$U_g(x) = -\beta_g(x - z_g)^2 - R_g^*(x, 0). \tag{41}$$

If this is greater than the utility $-\beta(0 - z_g)^2$ with the status quo 0, interest g will recruit the votes to enact x. This condition is assumed to be satisfied, which requires that g have either an extreme ideal point or intense policy preferences satisfying $\beta_g(2z_g - x) \geq 2\beta_h + \alpha x$.

5.2 THE AGENDA-SETTING STAGE

As discussed above, the agenda setter is assumed to take into account the aggregate preferences of the legislators. Since legislators have ideal points z uniformly distributed on $[-\frac{1}{2}, \frac{1}{2}]$, the agenda setter's policy preferences $u_0(x)$ are

$$u_0(x) = -\left(\int_{-1/2}^{x} \alpha(x - z)\, dz + \int_{x}^{1/2} \alpha(z - x)\, dz\right)$$

$$= -\alpha\left(x^2 + \tfrac{1}{4}\right).$$

The agenda setter thus chooses x based on $u_o(x)$ and the support provided by the two interests as in (23). Note that even though interest h does not recruit votes in the voting stage, it may compete at the agenda-setting stage.

In the agenda-setting stage the two interests compete over the alternative x to be put on the agenda. Proceeding as above with $c_h(x) = \tau_h - \beta_h|x - z_h|$ and $c_g(x) = \tau_g + U_g(x)$, where the latter is given in (41) and includes the cost of recruiting the votes necessary to obtain passage of x, the alternative x^* is, if $2\beta_h \geq \alpha$,

$$x^* = \frac{\beta_g z_g - \frac{3}{2}\beta_h}{\beta_g + 2\alpha}, \tag{42}$$

which is positive if and only if $\beta_g z_g \geq \frac{3}{2}\beta_h$. Otherwise, interest g does not initiate the competition. Interest g thus must have intense policy preferences or a relatively extreme ideal point before it will influence the agenda. The equilibrium alternative in (42) is strictly increasing in z_g, so an interest with more intense policy preferences elicits a greater policy change from the status quo. To simplify the number of cases that must be analyzed, let $z_h = 0$, so that interest h's ideal point is the status quo. Any support provided by h is thus defensive.

As an example, let $\beta_g = \alpha = 1$, $\beta_h = \frac{1}{2}$, and $z_g = \frac{3}{2}$. Both interests then participate, and $x^* = \frac{1}{4}$, $x_g = \frac{1}{2}$, and $x_h = 0$. The constants in the support schedules are $\tau_g^* = \frac{33}{16}$ and $\tau_h^* = \frac{1}{16}$, and these equal the negatives of the respective utilities. In this example, interest g is strictly better off by initiating the nonmarket competition, and interest h counteracts g's strategy. Interest h's nonmarket strategy has two components. First, at the voting stage h's threat to recruit the least-costly majority forces g to expend considerable resources in its majority protection strategy. That is, h's threat is $\beta_h x^* = \frac{1}{8}$, and g is forced to provide support with $\hat{\eta} = \frac{1}{2}$ at a total cost of $R_g(x^*, 0) = \frac{5}{16}$. Second, at the agenda-setting stage, h competes by offering a support schedule $c_h^*(x) = \frac{1}{16} - \frac{1}{2}x$. Interest g offers a support schedule $c_g(x) = \frac{33}{16} - \left(x - \frac{3}{2}\right)^2$. The executive gains from the interest-group competition and has utility $u_e(x^*; 0) = \frac{3}{8}$. Interest g also gains relative to not implementing a nonmarket strategy, whereas interest h is worse off when g does so. The interests are thus not in a prisoner's dilemma.

To illustrate the effect of competition, consider this example in the absence of interest h. The politics are thus clientistic, and the alternative is $\hat{x} = \frac{6}{5}$, which is considerably closer to g's ideal policy than in interest-group competition. The utility of interest g in client politics

is $-\frac{9}{20}$, so g is worse off as a result of the competition by $\frac{129}{80}$. Interest-group competition thus results in smaller policy changes and smaller rewards to the initiator of the nonmarket action.

As another example, if $\alpha = \beta_g = \beta_h = 1$ and $z_g = \frac{3}{2}$, there are two equilibria. In one, both interests compete and $x^* = 0$, and the utilities are $U_g = -\frac{9}{4}$, $U_h = -\frac{1}{2}$, and $u_e = \frac{1}{2}$. In the other, only interest g is active, and $x^* = x_g = \frac{1}{2}$. The utilities are $U_g = -\frac{9}{4}$, $U_h = -\frac{1}{2}$, and $u_e = 1$. In the second equilibrium interest h does not compete on the equilibrium path of play, but the threat of its vote recruitment is sufficient to moderate the agenda-setting strategy of g.

5.3 PRINCIPLES FOR NONMARKET STRATEGY IN INTEREST-GROUP POLITICS

As the numerical example indicates, an interest prefers to avoid interest-group competition if possible, since it generally does better in client politics. Not only does the opposition reduce the interest's ability to obtain a favorable policy, but interest-group competition may give the officeholder bargaining power that it can use to extract resources from the interests. If there is an opposing interest, the nature of the competition and the strategies employed depend on the institution. In a majority-rule institution as considered in Section 5.1, the threat of action by the defender of the status quo can force the proponent of change to provide considerable resources. Moreover, even if the opposing interest is inactive on the equilibrium path of play, the threat of action can moderate the influence of the other interest.

In an executive institution, interests seek to influence the executive to choose a decision in their favor. If the instruments are politically valuable resources such as votes, endorsements, campaign contributions, legislative support, or other forms of political support, interest-group competition can be modeled as competing offers of support to the executive. These offers may be defensive, since the interests may find themselves in a prisoner's dilemma in which each has an incentive to offer support even if they would both be better off if neither offered support. This is consistent with the perspective that interest-group competition gives executive officeholders bargaining power and allows them to extract politically valuable resources from interests.

The strategy of an interest trades off policy gains elicited by greater support against the cost of that support, and the equilibrium policy reflects the preferences of the interests as well as the preferences of the executive. The policy will favor the interest with the more intense preferences, and the support of the opposing interest limits the executive's responsiveness to those preferences.

Interest-group competition in a majority-rule institution has both an agenda-setting and a voting stage. The agenda-setting stage may be represented by a model similar to that of an executive institution with interests offering support that elicits the alternative placed on the agenda against the status quo. In the voting stage, the interests compete for votes, and in the model considered here the advantage rests with the one that moves last. The strategy of that interest is to recruit the least-costly minimal majority of votes to defeat the alternative. The interest that moves first deploys a majority-protection strategy in which it offers sufficient resources to legislators that the opposing interest will be unwilling to recruit a majority. The resources that must be provided in a majority-protection strategy then affect the support the interests offer at the agenda-setting stage. Even if an interest knows that it will be unable to recruit the votes to defeat the alternative, it may attempt to affect the agenda. Interest-group competition in a majority-rule institution thus involves competition at both the agenda-setting and voting stages. The initiative typically rests with the interest seeking a change in the status quo, and the opposing interest's strategy is counteractive. Rent-chain mobilization as considered in Section 3 can complement majority-building and agenda-setting strategies.

As in client politics, this theory of interest-group competition implies that a nonmarket strategy should target both the agenda-setting and the voting stages of a majority-rule institution. In an executive institution, the interest may focus directly on the decision itself. This suggests that nonmarket strategies deployed in executive institutions are more likely to be behind the scenes, and those in majority-rule institutions are more likely to be visible. This also suggests that interests with controversial nonmarket issues on their agendas may prefer to address issues in executive rather than majority-rule institutions, to the extent that the institutional jurisdiction can be selected.

This conclusion may depend to some extent on the political system. In the United States, due-process requirements make activity in executive institutions relatively transparent, whereas in systems without a strong due-process requirement, more of the nonmarket activity is behind the scenes. Consequently, nonmarket strategies are more likely to be behind the scenes in parliamentary systems than in the United States. Similarly, in parliamentary systems in which legislative decisions are in effect made in cabinet or in party coalitions, nonmarket strategies may give relatively more attention to agenda setting by the cabinet or party coalition. Indeed, nonmarket competition in parliamentary systems with strong cabinet or party control of parliamentary activity may be better represented by a model of an executive than a majority-rule institution.

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