

MARKET STRUCTURE AND POLITICAL INFLUENCE: NEW DATA ON POLITICAL EXPENDITURES, ACTIVITY, AND SUCCESS

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This paper utilizes new data to evaluate the determinants of the political influence of thirty-five manufacturing industries on the U.S. Congress during 1976-80. Several measures of influence serve to distinguish between political activity and success. Seller concentration and geopolitical dispersion increase both activity and success, but neither industry size nor leading-firm size proves significant. We test whether political expenditures facilitate obtaining the favors conferred on an industry by its market structure or by influence independent of that structure; statistical inference strongly confirms both roles.

Economists who pursue the consequences of market organization have now reached beyond the narrowly economic to the social and political realms. Downs (1957) and later writers have supplied an inventory of attractive economic models of political behavior which have yielded testable hypotheses about the effects of market and enterprise structures on political influence. Unfortunately, these empirical tests all suffer several serious deficiencies. In this study we use new data to avoid or mitigate these deficiencies. These data reflect the activity directed toward the U.S. Congress by 35 manufacturing industries over the period 1976-80, and the degree of political success that they attained.

I. PROBLEMS WITH STATISTICAL TESTS OF HYPOTHESES ABOUT POLITICAL INFLUENCE

Our contribution lies more in data and testing procedures than in new primary hypotheses; thus we start by reviewing the principal defects of previous statistical tests.¹ Each reveals some or all of the following shortcomings:

1. The study addresses the factors determining only a single outcome of political influence, such as the rate of tariff protection granted to an industry or its average realized rate of corporation income tax. Yet political influence used for one purpose may well be unavailable for another. We expect that the economic actor uses his assets to gather the most valuable basket of plums from the political tree. A powerful industry might use its influence to gain large benefits of one type, passing up lesser ones that it could have seized instead. Any test of the relation between overall political influence and the number of plums plucked from a particular branch therefore utilizes an incomplete model.

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1. For surveys of this literature see Epstein (1980), Siegfried (1981), and Baldwin (1982).

2. Some studies investigate the relation between a sector's market structure and its expenditures on influencing the political process. Others address the relation between market structure and political outcomes. But none of them closes the circuit of relationships by investigating the role of expenditures in wielding political influence, despite the urging by some writers that the relationship may exhibit significant scale economies or threshold effects.

3. Each study implicitly assumes a locus of political decision that may be sharply at variance with the institutional evidence on where, when, and by whom these decisions get made. Tariffs in year t are regressed on market structures prevailing at that time, even though many or all of the rates last received active political consideration years before. Similarly, industries' effective rates of corporation income tax are explained by their market structures, despite the fact that those tax rates result from broader political decisions that affect many other industries and administrative rulings that apply to individual firms. Although the assumption of a perfect market in political coalitions averts the need to establish a direct correspondence between economic actors and the political actions taken, this assumption is empirically implausible.

A brief outline will serve both to preview our own analysis and to indicate how we evade these traps. We observe the bills introduced in the U.S. Congress during 1976-80 which we deem to affect the specific interests of 35 manufacturing industries. We also secure information from the industries' lobbying organizations on their legislative priorities during these years and how many goals they achieved. These measures of political outcome reveal the whole spectrum of political favors sought by these industries from the U.S. Congress, if not from the U.S. Government as a whole. We thus analyze the spectrum of political outcomes and not a single class of them, dealing substantially with the first problem noted above. We also confine the inquiry to a specific locus of political choice and period of time (the third problem). We secure data on some classes of expenditure related to political influence, allowing a partial investigation of how political benefits depend on expenditures (the second problem).

II. ATTRIBUTES, EXPENDITURES AND POLITICAL BENEFITS

Most of the hypotheses to be tested below are derived from the existing economic models of political behavior. We note their origins in the course of presenting the explanatory variables that they indicate. However, one conceptual problem which requires advance consideration concerns the effects of an industry's expenditures on political influence on the benefits it receives. Theoretical models of political influence emphasize the industry's structural attributes as the basis of its influence. For example, in a pure voting model (Downs, 1957), an industry commands the most influence if its economic welfare has the potential to determine the electoral choices of the most voters. Given the attributes that endow a sector with political influence, what significance do we ascribe to the resources it spends directly on political influence? Two answers are possible which hold quite different implications for the statistical relation between market structure and political influence.

Independent role of expenditures. With the political effect of the industry's structural attributes taken into account, expenditures may wield an independent influence on the political benefits attained. This view implies that a million dollars efficiently spent should buy the same value of political benefits, no matter what

industry does the spending. The independent role of expenditures invites us to assume that the industry is a unitary actor making rational investments in political benefits. Given the benefits conferred by its dowry of structural attributes, it spends to support political candidates, disseminate information favoring its cause, etc., up to the point where the last dollar buys just one additional dollar of expected benefits. That the political benefits gained per dollar of an industry's expenditures are independent of its structural attributes is a limiting assumption, but one that offers two testable predictions. First, political expenditures and structural attributes should both contribute to the statistical explanation of the political benefits that industries secure. In addition, differences in political expenditures among industries should not be just a direct reflection of differences in the structural bases for their political power.

Facilitating role of expenditures. At the opposite pole, political expenditures may represent a transaction cost that an industry incurs to convert its attributes into effective influence. If political benefits are foregone when no funds are spent, transaction outlays will yield very high net benefits up to the point where they accomplish their purpose, beyond which the marginal net benefits drop abruptly. Some types of political expenditure seem likely to play a facilitating role: listening-post activities to determine what policy issues might affect an industry's interest, the dissemination of information to Congress and the public about an industry's problems or the worthiness of its requests, etc. A "facilitation" model of industries' political expenditures yields the prediction, opposite to that of the preceding "independent" model, that industries' expenditures should be largely explained by their structural attributes. Expenditures should add little to the ability to explain political benefits on the basis of structural variables. These conflicting predictions will be tested in the following regression analysis.

These two models of the role of expenditures raise another point about the determining roles of attributes and expenditures. Many political decisions are adversary in that benefits conferred on one sector come largely at the expense of another, or that the benefits of a positive-sum game captured by one sector become unavailable to another. The political-science literature suggests a variety of distinctions resting on the extent and character of adversary relations surrounding political decisions. The adversary structure of many political decisions holds two implications for the inter-industry analysis of political benefits. First, where political allocations are a zero-sum game among industrial sectors, the standard procedure of treating industries (and their attributes) as independent observations becomes inappropriate. The extent of adversary economic interest between pairs of sectors and the relative values of the attributes determining their political power then needs to be modeled. Second, rational investments of resources in political influence depend on conjectures about the probability of winning in adversary situations. If each actor's political power were accurately defined and known to all, contests of will would generally not occur; losers would capitulate in advance, and winners would spend only the minimal transaction costs needed to claim their trophies. We can hardly conceive that an industry's political benefits bear a continuous relation to its structural attributes or political expenditures without assuming that the actors face either a shifting set of unfamiliar adversaries or great uncertainty about the chances of defeating an opponent with known assets. We shall embrace the assumption in the following analysis, but we do build into our regression analysis one check to help test its validity. We employ a portfolio of dependent variables that give varying weights to the

number of political contests that an industry entered and the number of victories that it scored.

III. DEPENDENT VARIABLES

Industries contest political issues that may be either important or unimportant to them, and they may either win, lose, or compromise in the contests. We have no comprehensive dollar valuation of the benefits sought and attained, but our data do allow various options for aggregating the political contests entered and weighting the successes obtained. We were driven to employ no less than seven dependent variables.² The first three were drawn from data generated by the Congressional computer system, which will produce a list of all bills that include words indicating the products of the industry. After checking for misclassifications,³ we used the resulting lists of bills to generate the following dependent variables:

BILLS Number of pieces of legislation filed during 1976-80 deemed to affect the industry.

WTBILL Weighted sum of number of bills filed during 1976-80 deemed to affect the industry. Bills favoring the industry were given 4 points if passed by both Houses of Congress, 3 if taken to a floor vote, 2 if a committee vote occurred, 1 if only introduced. Bills opposed by the industry were weighted 3 if never reported out of committee, 2 if voted on by committee but stopped short of a floor vote, and 1 if defeated in a floor vote (no points if the anti-industry bill passed).

ZBILL Weighted sum of number of bills filed during 1976-80 deemed to affect the industry. Bills favorably affecting the industry were given a weight of 1 if they were passed by both Houses of Congress, -1 if they were adopted over the industry's opposition.

These three variables were designed to range between a pure measure of political activity (*BILLS*) and one of political success (*ZBILL*). *WTBILL* is an arbitrary combination of the two attributes that weights activity (the number of bills filed) by the industry's ability to advance those it supports and halt those that it opposes. *WTBILL* is congenial to our assumption that industries face considerable uncertainty about political success and so expend political resources in some degree whenever their interests are affected.

The second group of dependent variables was drawn from the results of a survey of 150 Washington offices and trade associations linked to the 35 sampled industries. Each organization was asked to list its legislative priorities for the years 1976-80. Spokesmen were urged to name at least six or seven issues. It was made clear that blocking hostile legislation should be valued just as much as pushing a favored bill through Congress. Each priority on an industry's list of issues when compared to the actual outcome, with the advice of both the industry lobbyists and Congressional

2. A full description of the data base and industry sample appears in Esty (1981, chap. 9). The data set and additional information can be secured from Professor Caves.

3. Such as a bill allegedly affecting the footwear industry that actually dealt with the *bootlegging* of cigarettes! This method fails to catch bills that affect an industry without mentioning it explicitly, and the classification of bills as affecting an industry often involved the exercise of judgment.

staff members, was evaluated as a success for the industry, a compromise outcome, or a defeat. The resulting information on priorities and their attainment led to the creation of the following four variables:

- SCORE* Weighted sum of the number of priorities indicated by the industry with a success weighted with two points, a compromise by one, and a defeat by zero.
- AVE* *SCORE* divided by number of priorities proclaimed by the industry.
- MINAVE* Identical to *AVE*, except that the denominator is constrained to be equal to or greater than five. That is, an industry was penalized as inactive if it could not name more than five priorities that it had pursued during 1976-80.
- ZSCORE* Weighted sum of the number of priorities indicated by the industry, with a success receiving one point, a compromise zero, and a defeat minus one.

Like the dependent variables based on the count of bills filed, these four variables also embody varying combinations of the attributes of activity and success. *SCORE*, like *WTBILL*, is a positive indicator of activity but with weights indicating the degree of success. *AVE* and *ZSCORE* differ in form but both approximate pure measures of success. *MINAVE* modifies *AVE*'s measure of success by penalizing industries that were proportionally successful but not very active.

TABLE 1
Correlation matrix of dependent variables

	WTBILL	ZBILL	SCORE	AVE	MINAVE	ZSCORE
<i>BILLS</i>	.929	.294	.785	.599	.664	.787
<i>WTBILL</i>		.200	.725	.480	.505	.693
<i>ZBILL</i>			.174	.429	.263	.272
<i>SCORE</i>				.674	.777	.836
<i>AVE</i>					.911	.747
<i>MINAVE</i>						.763

We did not secure from the industry spokesmen any ranking by importance of the legislative goals that they named. Nonetheless, these four variables do differ from those based on the bill count in that they implicitly permit the industry's spokesmen to focus on issues of real interest and omit those with unimportant or roughly neutral expected effects on its welfare. Table 1 provides a correlation matrix of the seven dependent variables.

We also hypothesize that an industry's expenditures on the political process may depend on its attributes. We measure two components. Lobbyists are required to report some expenditures made to influence legislation. The consensus (confirmed

by our interviews) is that the loosely drawn laws often require that only tiny fractions of actual outlays be reported; thus we made no use of these data. Rather, we acquired our measures of political inputs from two other sources that will be defined as separate variables:

LOBBY Although the budgets of lobbying organizations and trade associations are not available to the public, we were able to secure information by direct survey on how many employees worked on legislative matters for each of these organizations. These were summed over the relevant lobbying organizations and trade associations of each industry and the total multiplied by \$30,000 as a rough estimate of annual costs per employee.

PAC U.S. corporations may not contribute funds directly to political candidates, but they may organize Political Action Committees to gather contributions from employees and distribute them to favored candidates. These contributions, subject to strict reporting requirements, were summed for each industry over the years 1976-78.

LOBBY and *PAC* were also summed to yield *RESOURCE*, which is our best estimate of the total traceable outlays to influence Congressional action.⁴ It of course omits such forms of expenditure as newspaper and television advertisements, direct mail, and speeches and lobbying by top executives.

IV. EXOGENOUS VARIABLES

Political outcomes are determined by a group of exogenous variables that describe an industry's potential for exerting political influence and its ability to coalesce to wield this influence. The models giving rise to some of these variables are quite familiar and will accordingly receive brief treatment.

Our analysis assumes that legislative action affecting an industry functions as a public good (or bad) for all member firms regardless of their efforts to secure (or repel) it. The resulting free-rider problem generates the prediction (Olson, 1965) that concentrated industries more readily surmount this barrier to political organization. The free-rider problem receives a different interpretation, depending on whether political expenditures take the independent or the facilitating role described above. The former interpretation implies that political favors can be bought, and that an industry's ability to overcome free-riding should affect its level of outlay. Seller concentration then should positively affect an industry's level of expenditure. The relationship could arise not just because concentrated industries overcome free-riding, but also because their excess profits become important for buying political influence if funds for that use cannot be readily borrowed from the bank. On the other hand, concentration may wield its influence through facilitating consensus on issues and allowing an industry to demand with a unified voice the political benefits

4. *LOBBY* was first trebled to make it comparable to *PAC*'s three-year total. In the regressions reported below we tested to see whether *LOBBY* and *PAC* are indeed homogeneous in their influence. Homogeneity could be rejected for only one of our seven measures of political activity and success.

to which its attributes entitle it. The "facilitation" view of political expenditure thus implies that concentration influences political activity and success but not expenditure.⁵ Therefore, we use:

C4SQ Squared value of the four-firm concentration ratio of the industry, 1972.

Squaring the concentration ratio seems responsive to the rapid proliferation of the free-rider problem expected as concentration drops below its highest levels; it also responds to Spence's (1978) finding about the apparent effect of "unconcentration" on uncertainty and goal congruence within the industry. We shall use a two-tailed test on *C4SQ* because some lines of reasoning suggest that concentration might be hostile to political influence. Coolidge and Tullock (1980) pointed out that concentrated industries often face regulation and general public ill-will that undermines their political influence. Caves (1976) suggested that they may fare badly insofar as the political process involves a balancing of perceived equities as between the deserving and undeserving.

Models based on voting behavior indicate that industry size should wield a positive influence on political success insofar as a larger industry's activity affects more voters, so that their self-interested electoral preferences coincide with the interests of the industry. The connection between any economic measure of size and voting power is somewhat loose, because an industry's votes per dollar of value added encompass not only its own input structure but also the perceived interests of suppliers, customers, and the like. Therefore, no particular measure of size can formally be shown preferable, and we simply employ:

VA Value added by the industry through manufacture, 1977.

Given the degree of free-riding, a large industry should more readily mobilize the resources to overcome any scale economies in political influence. There are reasons to expect scale economies in lobbying, as Bartlett (1973) urged. The adversary nature of the political process makes the role of industry size ambiguous, in that size renders an industry conspicuous and a target for lucrative exactions by groups well endowed for political success. For that reason the positive relation of *VA* to political influence may be more apparent in dependent variables that emphasize activity than those that emphasize political success.

Contrary to the assumption maintained so far, not all political effort exerted on an industry's behalf comes through industry-wide associations. Individual firms may undertake much of it directly. In that case the consideration of scale economies points to a positive influence for the absolute sizes of the firms (or the leading firms) in the industry. Large firms are more likely to have Political Action Committees (Epstein, 1979) and probably enjoy easier access to members of Congress. Yet, weighty counter-arguments can also be put forth. Small enterprises, especially if decentralized, may carry substantial weight in a political system with geographical representation. Large firms with diversified activities will find that their overall interests are balanced on some issues that would leave smaller and (by assumption) more specialized firms with clear preferences. The variable used is:

5. An interesting empirical study of firms' motives for joining collective associations is provided by Marsh (1976).

BIGFIRM Number of enterprises with annual sales exceeding \$250 million classified to each industry.⁶

We can anticipate at this point the problem of multicollinearity that routinely plagues investigations of this sort. Large firms tend to operate in large industries and to hold large market shares, causing firm size to be highly correlated with industry size and seller concentration. Expressing concentration in its squared form was expected to reduce this problem and did so in fact. However, *BIGFIRM* and *VA* turned out to be highly correlated. Therefore we employed the strategy of partitioning the industry's value added into that originating in large and in small enterprises by defining the following variables:

BIGVA Value added in the industry by large enterprises with annual sales of manufactures exceeding \$250 million;

LITTLEVA Value added in the industry by enterprises with annual sales of manufactures less than \$250 million.⁷

If industry size and the sizes of leading firms both exert positive influences on political activity and success, then *BIGVA* and *LITTLEVA* should both take significant positive coefficients, but with their magnitudes indicating that a dollar's worth of economic activity in a large enterprise yields more political clout.

In a system of geopolitical representation, an industry's political influence may increase as its economic activity becomes dispersed and its members can wield influence in a larger number of Congressional districts. Examples abound of political triumphs by small-businesses industries with their enterprise units widely dispersed (funeral directors, dairymen). A contrary argument may also be developed, because geographic and geopolitical concentration of an industry assists in forming consensus and defeating the free-rider problem as well as guaranteeing a decisive say with some members of Congress. Thus there is no firm prediction about the sign of

GEO Index of geographic dispersion of economic activity, 1977. For each industry and state, the number of employees as a percentage of the state's total employment was calculated. The industry's mean percentage of state employment (across the 50 states) was then divided by the standard deviation of this employment percentage.

Although these exogenous variables lie at the core of previous theoretical and statistical research, the list hardly satisfies the requirement of a complete model. Toward that end we employed several variables that seem likely to influence an industry's political activity, success, or both. A generation of lore on the military-industrial complex suggests that involvement with national defense yields substantial political clout for an industry. We expect a greater rate of political success for industries designated as

VITAL Dummy variable set equal to one for tank building, shipbuilding, airframe, and petroleum refining industries.

6. Sales figures are on the basis of the U.S. Bureau of the Census *Enterprise Statistics*, and so exclude sales outside of manufacturing. Data for 1977 were not available when the project was undertaken, and so 1972 information was used.

7. The subdivision of the industry's value added into these two components is approximate and subject to error, because of the form in which these data are presented in the *Enterprise Statistics*.

In the same spirit we find that industries have been affected in varying degrees by a perceived public interest and subjected, as a consequence, to regulation. Regulation itself can either impair or protect an industry's interest; its occurrence probably indicates little about an industry's political success. It does suggest a high degree of involvement, and so a positive relation to political activity is expected for the variable:

REG Judgmental variable ranging from 5 (most regulated) to 1 (least regulated) summarizing intensity of all types of U.S. government regulation affecting the industry.⁸

The adversary nature of many redistributive political decisions calls for an extensive effort to represent the political strength of the industry in question *relative to* those opposing it on the actual issues. The uncertain signs of market-structure variables such as *BIGFIRM* and *VA* discourage any elaborate effort to represent the weighted average political strength of an industry's opponents. We do invoke the proposition that an industry selling to other producer sectors faces a core of potentially organized opposition to any effort to seek rents through the political process. Political success should thus be negatively related to:

OPP Number of industries to which the industry sells, indicated by positive values in the cells of the input-output table.

This variable rests on the traditional assumption that household consumers are generally unorganized and offer little regular opposition. It is contradicted by the instances in which political entrepreneurship has succeeded in making an industry's political objectives a matter of general public concern, whether to its benefit or detriment (Anderson, 1981). One approach to this problem would be to assume that a substantial threshold must be transcended before an industry comes into prominence in the general news media and with the broad public. An industry thus may be exposed either to favorable or unfavorable public opinion, or it may simply be ignored. In an attempt to capture this exposure we devised two variables:

PROM Number of times an industry is mentioned in the *New York Times Index* during the years 1977 and 1979 when the publicity is thought to have been generally favorable.

NEGPROM Number of times an industry is mentioned in the *New York Times Index* during they years 1977 and 1979 when the publicity is thought to have been generally unfavorable.

The two variables serve to test the possibility that political activity and success are affected asymmetrically by favorable and unfavorable exposure.

A final aspect of the model lies in the harmony of interest among factors of production employed by an industry. In organizational models the firm is conceived as a coalition of specialized factors, each with possible access to long-term rents and quasi-rents flowing from the firm's activities. Uniting these factors to exert political influence presents a free-rider problem like that of coalescing the industry's competing firms. The most conspicuous organizational feature of the industry's hired factors of production is surely the degree of unionization of the labor force. However, its

8. This variable represents a consensus judgment based on the opinions of several experts on regulation, notably Professor James Q. Wilson.

influence on our measure of political activity and success is ambiguous, because organized labor could amplify an industry's influence on some issues while opposing its entrepreneurs on those issues dividing labor and management. Indeed, one-quarter of the industries in our sample listed "defeat of labor law reform" among their legislative priorities. Therefore, in some auxiliary regressions we included

UNION Percentage of production workers in an industry who are members of a trade union.

We tested for the effect of labor-management political conflicts by employing

UANTI Number of legislative priorities on which management and union are opposed, multiplied by *UNION*.

V. ESTIMATION AND STATISTICAL RESULTS

These variables were collected for a sample of manufacturing industries. An important objective in selecting industries was to assure substantial variance among them in the sizes of their leading firms, as well as to include some industries that contain very large firms. Therefore, we secured a list of the largest and the smallest 150 enterprises included in the 1980 *Fortune Double 500 Directory*. We then picked for consideration industries with which some of these firms could clearly be identified. We narrowed the resulting list of industries further by excluding those lacking clear boundaries or fitting badly into the Standard Industrial Classification. We also omitted some industries closely similar to others on our list and sought roughly representative coverage across the manufacturing section of the Standard Industrial Classification. The resulting sample used in the following analysis consists of thirty-five industries.

Our principal analytical problem, indicated in section II, was to determine whether an industry's outlays on political activity wield an independent influence or merely assist it to gather the political benefits due to its attributes. In table 2 we present a regression analysis of the variables introduced above in order to address this question. Table 2 contains eight regression equations, the dependent variables being the seven measures of political activity and success and *RESOURCE*, the combined measure of expenditures. The right-hand column of the table, which contains an OLS regression equation with *RESOURCE* as the dependent variable, provides a convenient starting point. First of all, the high proportion of *RESOURCE*'s variance explained lends appreciable support to the "facilitation" view of political expenditure. So does the fact that variables accounting for much of the explanatory power are industry size and *VITAL*, the dummy indicating defense and military involvement. Large sectors and those heavily involved with public expenditure presumably have more numerous points of contact with public decision-making, demanding higher transactional outlays. The coefficients of *BIGVA* and *LITTLEVA*⁹ on their faces suggest that small enterprises spend more on political activity per dollar of value added than do large ones. Before accepting that conclusion, however, we should note that *RESOURCE* may omit some types of political outlay. If there are scale economies in political representation, large firms are likely to undertake politi-

9. The variables *BIGFIRM* and *VA*, defined above, proved highly collinear as expected (0.87), and so we turned to the strategy of splitting the industry's value added into that emanating from large and small firms.

TABLE 2
Regression analysis of determinants of political activity, success, and expenditure

Independent variable	Dependent Variable							
	BILLS ^t	WTBILL ^t	ZBILL	SCORE ^t	AVE ^t	MINAVE ^t	ZSCORE	RESOURCE
Constant	-50.4 (2.68)	-44.3 (2.74)	-.339 (.35)	-3.80 (2.51)	-.476 (.42)	-.017 (.15)	-2.84 (3.01)	-.630 (1.54)
C4SQ	8.02 (3.02)	5.57 (2.54)	.245 (1.79)	.971 (4.17)	.080 (4.33)	.069 (3.89)	.558 (4.24)	.012 (.21)
BIGVA	-1.71 (.53)	-4.40 (1.57)	.473 (2.61)	.048 (.18)	-.002 (.10)	-.002 (.07)	.208 (1.19)	.175 (2.46)
LITTLEVA	8.58 (1.39)	8.70 (1.66)	-.166 (.53)	.905 (1.86)	.072 (1.90)	.054 (1.45)	.570 (1.90)	.236 (1.85)
RESOURCE	14.8 (4.00)	18.1 (4.82)	-.386 (.87)	1.09 (3.78)	.029 (1.43)	.057 (2.72)	1.35 (3.17)	—
GEO	2.96 (1.50)	-.813 (.49)	.271 (2.50)	.269 (1.65)	.029 (2.22)	.037 (2.79)	.071 (.68)	-.028 (.60)
VITAL	-17.4 (.82)	2.29 (.13)	4.92 (4.05)	-5.16 (2.80)	.030 (.23)	-.160 (1.17)	-1.65 (1.42)	1.39 (3.06)
REG	15.9 (2.16)	18.0 (2.81)	.039 (.09)	2.24 (3.50)	.037 (.81)	.005 (.12)	.181 (.48)	.213 (1.27)
OPP	-.195 (2.07)	-.212 (2.09)	-.092 (2.24)	-.007 (1.05)	-.001 (1.21)	-.001 (1.46)	-.004 (.99)	.004 (2.30)
\bar{R}^2	.725	.809	.618	.797	.518	.503	.697	.656

Note: Equations indicated by superscript *t* are tobit estimates; the others are ordinary least squares. For tobit equations, \bar{R}^2 values for corresponding OLS equations are reported. Figures in parentheses are *t*-statistics, their signs omitted.

cal activities on their own, small firms through industry associations, so the proportion of large firms' total outlays omitted from *RESOURCE* is probably greater than for small firms.¹⁰ The variables that fail to contribute to explaining *RESOURCE* — *C4SQ* and *GEO* — are as interesting as the ones that do. However seller concentration may affect political influence, it does not serve to overcome the free-rider problem and thereby enlarge the industry's spending on Congressional representation. Similarly, geopolitical dispersion is an attribute that has no positive influence on the political outlays that we measure.

Now we can turn to the remaining equations of table 2, in which the seven measures of political activity and success are regressed on the attribute variables and also on *RESOURCE*. Tobit methods of estimation are employed for five of the seven variables which are constrained to be nonnegative (two are bounded from above as well); R^2 values from the corresponding OLS equations are reported for comparison, but these are biased and therefore can be taken only as general indicators.

In examining the regressions, we seek to determine both those exogenous variables which affect all dependent variables significantly and those which differentially affect the dependent variables measuring activity and success. *RESOURCE* wields a significant positive influence on most dependent variables, but it affects political activity more strongly than political success. The significance of this result is considered below. Seller concentration (*C4SQ*) proves significant at the 5 percent confidence level in all but one equation (10 percent in that one) and seems an equally good predictor of political activity and success. Since *C4SQ*'s influence does not operate through *RESOURCE*, we conclude that seller concentration amplifies political influence not through overcoming the free-rider problem to mobilize funds but through fostering agreement within an industry on the positions to be taken and political benefits to be pursued. On the other hand, with *RESOURCE* controlled, the variables describing industry and company size have rather muted impacts. *BIGVA* is generally quite insignificant, although the strongest indications of a positive influence do come for the measures emphasizing political success (*ZBILL* and *ZSCORE*). *LITTLEVA* shows a somewhat more regular positive influence, but one that is only weakly significant.¹¹

An industry's geopolitical dispersion (*GEO*) is positively related to six of the seven dependent variables; its significance is erratic but tends to favor political success more than political activity. The status of a vital industry (*VITAL*) has a quite erratic influence — sometimes significantly positive, sometimes significantly negative. Such industries did well on an objective scoring (*ZBILL*) but tended to do poorly on their subjective scoring of their own political success (*SCORE*, *MINAVE*, *ZSCORE*). Regulated status (*REG*) appears to predict a high level of political activity for an industry but not a high level of success.¹² The adversary interest of customer

10. Nonetheless, Mann and McCormick (1980) do report results agreeing with our regression coefficients to the effect that large firms spend proportionally less on lobbying than do small firms.

11. We constructed alternative versions of these variables based on industry sales rather than value added because of the approximation involved in calculating *BIGVA* and *LITTLEVA*. Value added is theoretically the more appropriate variable, but we were concerned with whether the differing approximations involved in constructing the two sets of variables would influence the results. Substitution of the sales-based variables leaves us with the same assessment of the influence of the industry's smaller firms. However, it suggests somewhat more strongly a negative influence of the activity carried on by large firms.

12. *REG*'s failure to wield a positive influence on *RESOURCE* is somewhat surprising. Probably much of a regulated industry's expenditure on influence and representation is addressed to the regulatory agency and the executive branch rather than the legislature, and is thus omitted from *RESOURCE*.

industries (indicated by *OPP*) exerts a negative influence on the dependent variables, but one not generally significant statistically.¹³ The proportion of variance explained by these equations is quite high, with activity (*BILLS*, *SCORE*) explained somewhat better than success.

Several other explanatory factors proposed above were omitted from the equations of table 2, because they proved both weak in theoretical specification (or statistical embodiment) and insignificant empirically. The two variables indicating the role of unions supporting or opposing the industry's political positions were insignificant, with *UNION* generally taking an incorrect (negative) sign and *UANTI* a correct (negative) one. Adding these variables to the equation of table 2 increases slightly the significance of some coefficients of other variables but leaves our general interpretation unchanged. An industry's public prominence was expected to affect its political success in a direction depending on the balance of favorable and unfavorable publicity. *PROM*, depicting favorable publicity, is always insignificant. *NEGPROM*, unfavorable publicity, should increase an industry's political activity but decrease its success. *NEGPROM* is indeed sometimes significantly positive (*WT-BILL*) and sometimes significantly negative (*ZSCORE*), but the pattern is neither robust nor systematic across the dependent variables.¹⁴ *NEGPROM*'s significance depends entirely on the inclusion of the petroleum industry in the sample.

Are there scale economies in political influence? With the variable *RESOURCE* aggregated over a variety of actors in each industry, our data base is not ideal to answer this question. Nonetheless, insofar as an industry's coalition pursues a unified set of interests, it is reasonable to check for any evidence of increasing returns over the outlay ranges represented by these sectors by adding the squared value of *RESOURCE* to the equation. The coefficient of the squared term should be positive if increasing returns are present; it is usually negative and always insignificant. There is no evidence of increasing returns to industries making larger political expenditures.

We return finally to the role to be attributed to political expenditures. Statistically, it does not fall exclusively into either the independent or the facilitating model developed above. *RESOURCE*'s variation can be explained quite well by industries' attributes, as the facilitation model predicts. The greater statistical influence that *RESOURCE* exerts on political activity relative to success seems to support a transactions-cost interpretation. Nevertheless, *RESOURCE* does influence political outcomes after industries' attributes are controlled. Some attributes, notably *C4SQ* and *GEO*, exert their influence without any intermediation from *RESOURCE*; they affect political outcomes but are not among the significant determinants of *RESOURCE*. Therefore an independent role cannot be entirely ruled out.

13. The variable *OPP* only scratches the surface of interindustry relations in relation to political benefits. Not every measure favoring an industry is automatically adverse to the interests of its customers or suppliers. Even if these relations were uniform, what (interindustry and intraindustry) distribution of customers has the greatest effect on the industry's pursuit of benefits is subject to conflicting hypotheses. In our judgment these relationships are not efficiently pursued in the framework of a broad cross-section investigation.

14. Our skepticism about *PROM* and *NEGPROM* is increased by their potential endogeneity in the model: publicity results in part from an industry's political activity.

VI. SUMMARY AND CONCLUSIONS

Previous studies of the contribution of an industry's market structure to its political influence have suffered from serious deficiencies such as incomplete measurement of influence, inconsistencies of the timing or locus of political influence and results, and neglect of the relationship between inputs and outputs of the political process. This paper employs new data on the political activity and success of thirty-five manufacturing industries in the U.S. Congress during 1976-80, along with an estimate of each industry's expenditure on legislative representation and influence. We expected each industry's political activity and success to depend on the structural attributes that determine its intrinsic political power and the resources spent to influence Congressional decisions. An important question concerns the relationship between attributes and expenditures. Expenditures to gain political favors could either be independent of the structural attributes, or they could merely constitute transaction costs needed to convert the latent political power conferred by the attributes into actual results. If expenditures are an independent factor, they should contribute to explaining political success after attributes are controlled, and attributes should not explain expenditures. If expenditures merely facilitate, they should not explain political success after attributes are controlled, and expenditures themselves should depend largely on attributes.

Our results lean toward the "facilitation" view of expenditure, in that expenditure is well explained by attributes, and expenditure levels themselves are associated with political activity more than with success. However, the independent role of expenditures is supported by a prevalent statistically significant influence of expenditures on political outcomes after attributes are controlled. Among the attributes, seller concentration increases both activity and success but does not affect expenditure. Hence its influence must arise not from solving the free-rider problem of mobilizing political contributions but from assisting an industry to express its preferences with a unified voice.¹⁵ We investigated the (collinear) influences of the sizes of industries and the sizes of their leading companies by splitting each industry's value added into that emanating from firms above a threshold size and that due to smaller firms. Neither firm size nor industry size has a robust influence on political activity or success with expenditures held constant.¹⁶ Geographic dispersion of an industry's activity tends to increase its political activity and success, although not its expenditures. An industry's perceived vital status (defense inputs, for example) seems to improve its batting average but overall has an unclear effect. Regulated status, on the other hand, increases political activity but not success. An industry selling to many others faces opposition to its rent-seeking activities that tends to decrease its activity and success (the signs in our regressions are correct but the coefficients not quite significant). The unionization of an industry's employees and its prominence in the current news (adverse or favorable publicity) wield no significant influence on its political activity or success.

15. Many though not all previous studies have claimed to find a positive influence of seller concentration on variables describing political benefits to the industry.

16. Salamon and Siegfried (1977) reported a positive influence of firm size, but that result has been contested (Coolidge and Tullock, 1980).

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