
Coalition portfolios and interest group influence over the policy process

Michael T. Heaney^{a,*} and Geoffrey M. Lorenz^b

^aOrganizational Studies Program and Department of Political Science, University of Michigan, 722 Dennison Building, 500 Church Street, Ann Arbor MI 48109, USA.
mheaney@umich.edu

^bDepartment of Political Science, University of Michigan, 5700 Haven Hall, 505 South State Street, Ann Arbor MI 48109, USA.

*Corresponding author.

Executive Summary An interest group coalition exists whenever two or more interest groups collaborate in advocating their public policy agendas. Working together in coalition is one of the most common tactics that interest groups use to advance their interests in the policy process. The extant literature on coalitions emphasizes interest group decisions to participate or not in one coalition, or their strategy toward coalitions in general, but gives insufficient attention to interest group participation in multiple coalitions. To rectify this deficit, this article examines the implications of groups' participation in multiple coalitions for their ability to influence the policy process. In order to account for interest group involvement in multiple coalitions, we introduce the concept of the *coalition portfolio*, which is *the set of all coalitions within a given area of public policy in which an interest group participates at a particular point in time*. The portfolio concept recognizes that interest groups may have a wide variety of coalition strategies depending on the mix of coalitions that they join. Variations in the structure of these portfolios matter both to interest groups and to policymakers. Moreover, coalition portfolios evolve over time as coalitions form and dissolve, and as political conditions adjust over the course of the policy process. We develop and test hypotheses that the change in the composition of coalition portfolios increases the influence of interest groups over public policy when: (i) the number of coalitions in a group's portfolio gets larger; (ii) the average size of the coalitions in a group's portfolio gets larger or smaller; and (iii) a group's portfolio improves its position within the overall network of coalitions. Network position is measured based on the betweenness of interest groups in coalition networks, which gives higher scores to groups that lie on the shortest paths between other groups. We test these hypotheses while accounting for other explanations for interest group influence, including: (i) the group's position in communication networks; (ii) the group's number of registered lobbyists working on Medicare; (iii) whether or not the group has a Political Action Committee; (iv) the extent to which a group's lobbying contacts lean toward one political party; (v) whether or not the group endorsed the legislation in question; (vi) the organization's age in years; and (vii) whether the group is a citizens advocacy organization, a business advocacy organization or some other organizational type. We evaluate these hypotheses



using a study of 115 interest groups involved in the enactment and implementation of the Medicare Modernization Act of 2003. This legislation established an outpatient prescription drug benefit in Medicare – a government health insurance program for the elderly and disabled in the United States – and made other significant changes to the program. We conducted personal interviews with representatives of 102 of these groups. We analyzed data resulting from these interviews using negative binomial and ordinary least squares regression models. The results support Hypothesis (iii); groups gain influence over the policy process when their coalition portfolios increase the extent to which they are situated between other groups in the coalition network. However, interest groups are limited in the extent to which they can create portfolios that have desirable levels of betweenness because network position is also a function of membership decisions made by all other groups in the network. These results provide insight into how the composition of coalition portfolios affects the ability of interest groups to exert influence over the policy process. This analysis is most directly applicable to policy debates over complex pieces of legislation. *Interest Groups & Advocacy* (2013) **2**, 251–277. doi:10.1057/iga.2013.7; published online 6 August 2013

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An interest group coalition exists whenever two or more interest groups collaborate in advocating their public policy agendas. Working together in coalition is one of the most common tactics that groups use in attempting to influence policy (Scholzman and Tierney, 1986; Hojnacki *et al*, 2012). Interest groups turn to coalitions as a mechanism to pool resources (Hula, 1999), to demonstrate to policymakers that they have resolved their internal differences and achieved a consensus on a position (Mahoney, 2008; Nelson and Yackee, 2012), and to aggregate political intelligence (Heaney, 2006). Interest groups sometimes choose not to participate in coalitions when they view the costs of participation – such as the need to compromise with coalition partners, reduced autonomy, and risks that the group will suffer from the coalition's missteps – as outweighing the potential benefits of collaboration (Browne, 1990; Wilson, 1995; Hojnacki, 1997; Holyoke, 2011). Nonetheless, coalition participation has grown in recent years because the increasingly crowded universe of interest groups makes it difficult for individual groups to attain prominence when acting alone (Salisbury, 1990; Leech *et al*, 2005).

Empirical research on coalitions generally focuses on whether or not interest groups use the coalition strategy *at all* (for example, Hojnacki, 1997; Mahoney, 2008; Baumgartner *et al*, 2009), how much they participate within a given coalition (for example, Hojnacki, 1998; Hula, 1999; Strolovitch, 2007), the size and stability of a given coalition (for example, Holyoke, 2011; Nelson and Yackee, 2012) or else provides an in-depth analysis of strategies and tactics within a small number of coalitions (for example, Levi and Murphy, 2006). Each of these approaches conceptualizes interest group strategy *vis-à-vis* a *single* coalition or toward coalitions generically.



In the everyday world of lobbying and interest group politics, advocates are confronted with opportunities to participate in *multiple* coalitions that touch on aspects of their policy agendas. This multi-coalitional reality, however, is not well reflected in the extant literature. While it is certainly true that some interest groups choose to join only one coalition or to eschew coalitional involvement entirely, more often groups are challenged with finding a balance among multiple coalitional involvements. Should an interest group become involved in a coalition for every issue on its agenda? Or should it be more selective, focusing only on coalitions engaged on a few of the group's core issues? Perhaps joining a variety of coalitions is a way for a group to amplify the value of its limited lobbying resources. Or, instead, is it possible that too many coalitional involvements weigh down a group's staff with the concerns of other organizations? Different interest groups answer these questions for themselves in different ways. Yet the extant literature offers little guidance on how groups make these decisions or what consequences they have.

In order to account for interest group involvement in multiple coalitions, we introduce the concept of the *coalition portfolio*, which is *the set of all coalitions within a given area of public policy in which an interest group participates at a particular point in time*. The portfolio concept recognizes that interest groups may have a wide variety of coalition strategies depending on the mix of coalitions that they join. Moreover, coalition portfolios evolve over time as coalitions form and dissolve and as political conditions adjust over the course of the policy process.

This article addresses the question of how differences among interest groups in their coalition portfolios affect their ability to influence policy. We examine three potential explanations for the relationship between coalition portfolios and influence: (i) Influence expands as the number of coalitions in a group's portfolio gets larger; (ii) Influence expands as the average size of the coalitions in a group's portfolio gets larger or smaller; and (iii) Influence expands as an interest group's portfolio improves its position within the overall network of coalitions. We assess these explanations using data from a study of interest group advocacy surrounding the Medicare Modernization Act (MMA) of 2003.

This article proceeds, first, by developing a theory of coalition portfolios and articulating our hypotheses for how the composition of a portfolio allows interest groups to influence policy. Second, we review the MMA of 2003 and explain how it provides an appropriate context for testing hypotheses derived from our theory. Third, we explain our research methods for gathering data on coalition participation, interest group influence and other aspects of coalition politics. Fourth, we explain our empirical models and report the results of our statistical analysis. The article concludes by considering the implications of our work for coalition politics and the participation of groups in the policy process.



A Theory of Coalition Portfolios

Building coalitions is a highly flexible strategy. Interest groups may establish an *ad hoc* coalition to address a single, non-recurring policy event, such as supporting or defeating an amendment to one particular bill. Or they may establish a coalition to engage a wide range of issues that can take decades to resolve. Coalitions may be informal – sometimes based only on a verbal understanding among participants – or may be institutionalized – perhaps having bylaws and paid staff. Coalitions vary in their tactical specialties, with some concentrating on lobbying and others focusing on grassroots mobilization, *amicus curiae* briefs (Box-Steffensmeier and Christenson, 2012), get-out-the-vote drives or media advertising (Boatright, 2007). Coalitions may be large or small, hierarchical or egalitarian, concentrated on one issue or many, or have a membership that is homogenous or heterogeneous.

Similarly, groups' purposes for joining different coalitions can vary widely. An interest group may join one coalition to help advertise its issue positions to the public, a second to lobby on an important provision of a pending bill, and a third to advance its interests in the courts. In doing so, it assembles a coalition portfolio.

Crafting a coalition portfolio not only requires a group to weigh the costs and benefits of participation in each coalition it considers joining (Hojnacki, 1997), but also to assess how memberships in diverse coalitions *interact* with one another. Do the functions performed by different coalitions complement or contradict one another? Are coalitional memberships redundant? Do they ally the group with an unmanageable set of partners? Further, each coalition membership taxes the interest group's limited staff resources such that participation in one new coalition may imply less effort devoted to other coalitions and non-coalitional advocacy activities.

While interest groups form coalitions to advance their own goals, coalitions also serve the interests of policymakers by signaling to policymakers that the coalition's groups have reached a consensus on the issue at hand (Nelson and Yackee, 2012). This signal reduces the transaction costs to policymakers of dealing with the groups in the coalition. Rather than meeting separately with a wide array of groups, policymakers can meet with a subset of relevant groups at once. As the groups have already worked out their differences – on one issue at least – the policymakers may well avoid becoming embroiled in internecine squabbles. This further reduces the cost to the legislators working on that issue, making it more likely that they will do so (Hall and Deardorff, 2006). Just as an interest group may benefit from joining a single coalition that serves the interests of policymakers well (Leifeld and Schneider, 2012), so too we expect that an interest group may benefit from constructing a coalition portfolio that meets policymakers' needs. Coalition portfolios are modified over the course of the policy process both because individual interest groups change their strategies and because of shifts in the overall political environment that are beyond the control of individual groups.



The question then arises as to *how* an interest group's coalition portfolio affects its ability to influence the policy process. How can an interest group build its coalition portfolio to maximize its policy influence? We consider three possibilities. First, we hypothesize that as an interest group joins more coalitions, it exerts more influence over the policy process. This notion is implicit in much of the interest groups literature that assumes that groups join coalitions when their benefits outweigh their costs (Hojnacki, 1997). If this hypothesis is true, then interest groups further their objectives whenever they add coalitions to their portfolio. Moreover, if this view captures the principal way in which portfolios matter, then a more nuanced theory of coalition portfolios would be largely unnecessary, as a theory for why an interest group joins a single coalition would suffice to account for its participation in multiple coalitions.

The second possible answer draws upon recent work by Nelson and Yackee (2012), who argue that coalitions are influential because they increase the uniformity of the messages sent by interest groups to policymakers. Thus, coalitions are more influential when they are larger because they signal more clearly to policymakers that the position taken by the coalition is viable. We hypothesize that interest groups exert more influence over the policy process when they join coalitions that are larger than when they join coalitions that are smaller. If this hypothesis holds, Nelson and Yackee's arguments about coalition success apply at the interest-group level as well. According to this view, adding a coalition to its portfolio helps an interest group more if the coalition includes a large number of other groups than if it includes a small number of other groups. At the same time, we recognize that it is possible that the converse of this argument is true. Interest groups may gain more individually if they join smaller coalitions, where they are poised to take more of the credit for the coalition's work (Browne, 1990).

The third possible answer invokes social network theory to account for the value added of joining coalitions. When interest groups work together in a coalition, this relationship is a type of social network tie (Ansell *et al.*, 2009). At a minimum, coalitional comembership affords two groups common access to inside information about the coalition's activities, strategies and plans. Comembers of a coalition become linked in the minds of audiences that are attentive to the coalition's activities. Coalition comembership may involve deeper relationships between interest groups – perhaps including intimate communication and collaboration – though the degree of closeness between groups varies from group to group and from coalition to coalition.

When an interest group joins a new coalition, it may change its position in the overall network of coalition relationships among groups. If the membership of the new coalition is not redundant with that of another coalition, then joining this new coalition links the group in a distinct way to other interest groups, thus modifying its network position. An interest group's network position also depends on the decisions of other groups. If *A* and *B* are both interest groups in a coalition network then *A*'s position may change when *B* adds or drops membership in a coalition. For example,



A may become relatively less central in the network when *B* joins coalition *P*; or, A may become relatively more central in the network when *B* withdraws from coalition *Q*. *Each interest group has a position in a coalition network that is defined by its coalition portfolio in conjunction with the portfolios of all other interest groups in the network at a given point in time.*

The position of an interest group in a coalition network may be of value to that group for three reasons. First, the group's position matters for its *access to information* within the network (Granovetter, 1973; Carpenter *et al*, 2004). Second, the group's position shapes its *opportunities for brokerage* in the network (Freeman, 1979; Burt, 1992; Fernandez and Gould, 1994; Heaney, 2006). Third, the group's position reflects its *status* in the network (Laumann and Knoke, 1987).

Recognizing the importance of network position, we hypothesize that interest groups with greater *betweenness* in the coalition network exert greater influence over the policy process than do those with lesser betweenness. A group's betweenness depends on the degree to which it is positioned on the shortest paths between others in the network (Freeman, 1979). If a group lies on the shortest path between other actors, then it is more likely to gain access to timely and sensitive information, be sought out as a broker in the network, and occupy high status. For these reasons, previous studies of interest group politics rely on betweenness to conceptualize variations in network position (Heaney, 2006; Ansell *et al*, 2009; Grossmann and Dominguez, 2009).

We anticipate that policymakers are more likely to rely on interest groups with high betweenness as contacts that minimize their transaction costs for managing the advocacy community than they are to rely on interest groups with low betweenness. Moreover, a group with high betweenness in the coalition network is by definition in coalition with groups that otherwise do not coordinate with each other through coalition work. Being in such a position means that the signal sent to a policymaker by such a group can credibly represent very disparate interests, and thus provide the policymaker with political cover in a way that representing a large group of homogenous interest groups cannot. Thus, we hypothesize that these high-betweenness groups are more likely than other groups to be able to exploit their network position to their own advantage in gaining influence over the policy process. If this hypothesis is true, then the ability of interest groups to leverage their coalition portfolios to achieve influence depends not only on the decisions that they make to join coalitions or not, but also on the participation decisions of other groups in the network. According to this view, the value of a group's coalition portfolio is not exclusively within its control.

Our three hypotheses – which focus on number of coalitions, average coalition size and network position, respectively – are not mutually exclusive. It is possible that a group simultaneously gains influence by joining more coalitions, increasing the average size of its coalitions, and improving its network position. There is no deterministic relationship between these concepts. The objective of our research is to determine which, if any, of these explanations account for how the composition of coalition portfolios enables interest groups to exert influence over the policy process.



The Medicare Modernization Act of 2003

The Medicare Prescription Drug, Improvement and Modernization Act was signed into law by President George W. Bush on 8 December 2003. It is generally referred to by its short title, the Medicare Modernization Act, or its abbreviation, MMA. The MMA is principally known as the legislation that established a prescription drug benefit in Medicare (also known as Medicare Part D), settling a more than decade-long dispute on the topic and fulfilling a significant domestic policy campaign promise by President Bush. At the same time, the MMA was major legislation that addressed broader issues in Medicare and health care generally. It created the Medicare Advantage program to replace Medicare+Choice as the way to deliver private health services to beneficiaries that chose this option (also known as Medicare Part C). It made a variety of incremental changes to the ways that health-care services are delivered and paid for under Medicare (Parts A and B), such as by altering the rules for covering preventive health services, competitive bidding for durable medical equipment, and the reimbursement of physician-administered drugs for multiple sclerosis patients. Beyond Medicare, the law addressed the importation of prescription drugs and authorized the formation of tax-preferred health savings accounts. Overall, the MMA had broad consequences for the operation of Medicare and other federal health programs.

President Bush and Republican leaders in Congress put their credibility on the line in promoting the law, whereas the Democratic Party was split in its opposition to the law. Democrats and Republicans divided over the role of private insurance companies in the administration of Medicare, with Republicans pushing for a larger role and Democrats desiring a smaller role. As a result, the MMA passed the House and Senate by narrow margins, with the procedural legitimacy of the final vote in the US House of Representatives in dispute (Iglehart, 2004).

The MMA remained contentious in the aftermath of its passage (Oberlander, 2007). This contentiousness manifested itself in disputes over the implementation of several major provisions, such as the regulation of Medicare Advantage, the rule for providing subsidies to low-income beneficiaries, and the evaluation of demonstration projects set in motion by the law. Some interest groups, such as associations representing health insurance companies, took the position that they had much at stake in the success of the MMA and, thus, tried to promote its effective implementation. Other groups, such as liberal advocacy organizations, approached the implementation process as one more opportunity to revisit the policy debates lost in the law's enactment. Nonetheless, the fundamental structure of the MMA remained essentially intact almost 10 years after the law's enactment. The Affordable Care Act of 2010 somewhat altered the rules that govern Medicare Advantage and closed the so-called 'donut hole' of prescription drug coverage under Part D. Other aspects of the MMA have been incrementally modified since 2003, but the MMA has not been subject to the unraveling that sometimes befalls landmark reforms (Patashnik, 2008).



The political process surrounding the MMA makes it an excellent case around which to evaluate the effects of coalition portfolios on interest group influence. By the time of the MMA debate in 2003, the consensus politics that surrounded Medicare during the early decades of its existence (Marmor, 2000) had been replaced by competitive interest group politics (Oberlander, 2003, 2007). Hundreds of interest groups from across the political spectrum became involved in the debate over the MMA. The issues surrounding the law were complex and multifaceted, involving a mix of distributive, redistributive, and regulatory concerns. To address these concerns, interest groups formed a plethora of coalitions on matters large and small. The topics engaged by the MMA spanned multiple government agencies including, but not limited to, the Department of the Treasury, the Federal Trade Commission, and the Department of Health and Human Services. The MMA remained high on policymakers' agendas for several years, allowing us to observe changes in the policy process from enactment to implementation of the law. In summary, examination of the MMA allows the observation of variation in types of interest groups, coalitions, and political configurations over the policy process.

The politics of health care are not necessarily typical of the policies of other policy domains in the United States (Heinz *et al*, 1993). The structure of policy networks often differs depending on the nature of the issue in question (Grossmann, 2013). As Carpenter (2012) argues, health politics are more amenable to redistributive arguments and moral claims than are politics in other domains, and bureaucratic agencies are more engaged in the administration of health policies than they are in other policy areas. However, because health politics are broad and diverse enough to permit the observation of variation in the essential dimensions of our question, they provide an appropriate context for our investigation.

Research Design

In order to study the relationship between interest group influence and coalition portfolios, it is essential to select a sample such that the interest groups in the sample share many coalition memberships. A random sample of groups would not accomplish this objective because randomly selected groups are unlikely to work on many issues in common. Moreover, much information about coalition participation is not advertised publicly, though it circulates throughout the policy community. As a result, it is necessary to obtain information about coalition participation through personal interviews, which are time- and resource-intensive to conduct. These two considerations call for a research design that focuses on a limited number of interest groups engaged within a coherent area of public policy. Along these lines, Laumann and Knoke (1987) set the standard for selecting the most active interest groups within a policy domain. In this article, we follow Laumann and Knoke's protocol to identify the most active interest groups that participated in the debate over the MMA from



2003 to 2006. This approach allows us to examine the dynamic participation of a diversity of interest groups and coalitions in a major public policy debate.

To select a sample of the most active groups participating in the MMA debate, we relied on a variety of sources. Specifically, we examined: (i) interest groups that testified before Congress on Medicare-related issues between 2001 and 2005 (LexisNexis, 2001–2005); (ii) the 120 interest groups with the largest reported lobbying expenditures that lobbied Congress on Medicare or Medicaid between 2001 and 2005 (US Senate, Office of Public Records, 2001–2005); (iii) the 50 interest groups with the largest reported lobbying expenditures that lobbied the Centers for Medicare and Medicaid Services between 2001 and 2005 (US Senate, Office of Public Records, 2001–2005)¹; (iv) interest groups that were mentioned in articles about Medicare appearing in *Congressional Quarterly Weekly Report*, *Roll Call*, *The Hill* and *The New York Times* (between 2001 and 2005); and (v) interest groups that announced a position either for or against the MMA, according to the congressional leadership offices of the Democratic and Republican parties (obtained by personal interviews).

Compiling multiple sources led to the identification of 378 groups that had at least some notable involvement in the debate over the MMA. We selected all groups with three or more total mentions across the sources we examined, which yielded a sample of 106 groups. We then selected an additional 9 groups for inclusion in the study based on our subjective judgment that these were important players on the issue², yielding a total sample of 115 groups.³ We contacted lobbyists representing all 115 organizations between May and August 2006 to request a personal interview. We were able to conduct interviews with 102 of these organizations, for a participation rate of 89 per cent. The interviews lasted between 30 min and 90 min, with a typical interview running 45–60 min.

During the interest group interviews, we extracted five pieces of information that are relevant to the study at hand. First, we asked respondents to list the MMA-relevant coalitions that they participated in during the debate over MMA implementation from 2004 to 2006 and to provide either a list of participating members of the coalition or contact information for a source within the coalition that could provide that list. Many interest groups were involved in several coalitions that addressed different aspects of the MMA. Second, we requested that respondents review the list of the 114 other organizations in the study and indicate which ones they communicated with about Medicare policy issues. Third, we instructed respondents to rate the partisan composition of their lobbying contacts on MMA-relevant issues on a five-point scale from almost entirely focused on Democratic contacts (= 1) to almost entirely focused on Republican contacts (= 5), with an even balance between the two extremes providing the midpoint for the scale (= 3). Fourth, we asked respondents to examine the list of 114 other groups to assess which ones ‘stand out as especially influential and consequential in formulating Medicare policy’ during the enactment of the MMA and then during the implementation of the MMA, giving us one measure of influence during each period. Fifth, we asked respondents if any organizations that



they think of as especially influential and consequential in shaping Medicare policy had been omitted from the list. The fact that no single organization was repeatedly named in response to this question strengthens our confidence that the list of 115 groups we compiled consists of the major interest groups active in the MMA debate.

The data collected from the interviews enable us to construct measures of coalition portfolios and interest group influence for each group in the study.⁴ Coalition portfolios were measured using a multi-step process. After the respondent provided a list of the implementation coalitions in which it participated, we obtained lists of the membership of all these coalitions named by respondents. Lists were obtained directly from the respondents, from a third-party contact affiliated with the coalition, from a coalition letter circulated by the coalition or from a coalition Web site. This approach allows us to estimate the coalition portfolios of organizations that decided not to participate in the personal interview, as these organizations were included on the coalition lists provided by other contacts. It also enables us to include the name of a coalition in an interest group's portfolio even if the group's respondent may have neglected to mention it during the coalition's interview. To obtain the list of coalitions active during the enactment of the MMA, we relied on the list of coalitions reported by Heaney (2006, pp. 917–919), which followed selection procedures comparable to those in this study. On average, each group was a member of 1.84 coalitions during enactment (ranging from 0 to 6) and 4.40 coalitions during implementation (ranging from 0 to 14). In total, we identified 39 coalitions active during the enactment of the MMA and 73 coalitions active during the implementation of the MMA.

Some overlap is present in what constitutes an interest group and what constitutes a coalition in this study. For our purposes, an 'interest group' is any nongovernment, organizational actor that was identified by the sources in our data as engaged in the debate over the MMA. However, 11 of these organizational actors are organized as coalitions that contain other interest groups in the sample. These overlapping actors include several trade associations, the American Federation of Labor–Congress of Industrial Organizations (AFL-CIO), and two enduring issue-specific coalitions.⁵

Interest group's influence over public policy is notoriously difficult to measure (Smith, 1995; Grossmann, 2012; Lowery, 2013). One reason for this difficulty is that policies – especially major legislation like the MMA – have hundreds of components that require the resolution of innumerable issues. Because of this complexity, it is difficult for any one observer to collect enough information to reliably judge who influences policy. Instead, knowledge about influence is distributed among the network of active players in the policy domain that collectively observe the exercise of influence within their particular niches. For this reason, we rely on the well-established method of asking interview respondents to rate the influence of other participants in the network (Gamson, 1966; Laumann and Knoke, 1987; Fernandez and Gould, 1994; Heaney, 2006; and Leifeld and Schneider, 2012). Although any one respondent is likely to have an incomplete view of the field, respondents collectively are expected to provide a reasonably accurate rating of the levels of group influence.



A skeptical reader may question whether the use of interviewer ratings introduces biases into the measurement of influence. For example, could the personal relationships among interview respondents bias their view of who is influential? Although we certainly cannot argue that our measure of influence is perfect, we contend that it is reliable and valid as long as two conditions hold. First, the interview respondents are observers that are uniquely knowledgeable of the inner workings of the policy under examination. Second, the interview respondents consist of all (or almost all) of the major participants on each of the sub-issues in the policy area. If we had conducted a random sample of participants in the policy domain then these conditions would not necessarily hold. However, by interviewing the leading lobbyists for almost all of the major interests involved in the MMA debate, we have generated an elite sample that meets these conditions and in which the biases in the data reflect the biases of the interest mobilization process (see Schattschneider, 1960). To the extent that influence scores are, in part, a product of the reputations that interest groups gain from interacting directly with other interview respondents, we point out, in line with Gamson (1966), that these reputations are a resource to interest groups which may have a direct effect on their ability to exert policy influence.

As a way of checking the validity of our influence measure, we estimate the correlation between media citations and influence citations. We recorded media citations received by interest groups during enactment and implementation from four publications that cover Medicare policy: *Congressional Quarterly Weekly Report*, *Roll Call*, *The Hill*, and *The New York Times*. We found that our measure of influence has a significant, positive correlation with all four measures. Specifically, the correlations are 0.478 ($P \leq 0.001$) with *Congressional Quarterly Weekly Report*, 0.485 ($P \leq 0.001$) with *Roll Call*, 0.494 ($P \leq 0.001$) with *The Hill* and 0.684 ($P \leq 0.001$) with *The New York Times*. Similarly, our results are in concordance with prior scholarly work by Iglehart (2004), Oliver *et al* (2004), Heaney (2006), and Oberlander (2007). In line with these qualitative studies, we find that the most influential groups during the enactment and implementation of the MMA were the AARP (formerly the American Association of Retired Persons), the pharmaceutical industry (as represented by the Pharmaceutical Research and Manufacturers of America) and the health insurance industry (as represented by America's Health Insurance Plans). These results suggest that our measure of influence does a reasonable job of assessing the influence of interest groups over Medicare policy.

Empirical Models

We estimate two sets of regression models on interest group influence. In the first set of regressions, we model the count of the number of times an interest group was cited by its peers as being especially influential and consequential during enactment and



implementation. As these counts are overdispersed, negative binomial panel models are the appropriate way to estimate the regression coefficients.

Because the negative binomial models explain the *level* of influence, they may not fully account for the fact that awareness about a group's influence accumulates over time. For example, the American Medical Association and the AARP were involved in the debate over Medicare long before the introduction of the MMA (Laumann and Knoke, 1987; Starr, 1982). To address this potential problem, we estimate a second set of regression models on the change in the number of influence citations from enactment to implementation. Because the change in citations is a difference, rather than a count, its distribution is approximately normal (rather than negative binomial). Thus, ordinary least squares with robust standard errors is appropriate. In these models, we estimate the effect of changes in our covariates of interest on changes in influence. This second set of regressions allows us to see how changes in coalition portfolios correspond with changes in influence, as well as to observe the dynamics of influence over the policy process. By examining change, we can be confident that our results are not strictly a function of preexisting influence reputations; this analysis allows us to examine variations that took place during the period of the study.

To test our three hypotheses, we include variables in our models for the number of coalitions in an interest group's portfolio, the average number of groups in a coalition in an interest group's portfolio, and the network position occupied by a group based on its portfolio. Each of these measures is tabulated by arraying group and coalition memberships in a two-mode network (C) arranged in an adjacency matrix, where actors in the first mode (rows) are interest groups (i) and actors in the second mode (columns) represent coalitions (j). A tie in C between i and j , denoted as $c_{ij} = 1$, indicates that i is a member of j . Otherwise, if i is not a member of j then $c_{ij} = 0$.

We calculate three measures for each i in C :

(1) *Number of Coalitions*

The *Number of Coalitions* (n) to which group i belongs is given as:

$$n_i = \sum_{j=1}^J c_{ij}$$

where the set of all possible coalitions has J elements.

(2) *Average Coalition Size*

The average size (s) of a coalition to which group i belongs is given as:

$$s_i = \frac{1}{n_i} \sum_{j=1}^J \left(c_{i,j} \sum_{i=1}^I c_{i,j} \right)$$

where the set of all possible groups has I elements.



(3) *Betweenness*

Betweenness is a descriptive statistic used in the analysis of actors in social networks, first popularized for one-mode networks by Freeman (1979) and elaborated for two-mode networks in Borgatti and Everett (1997). It relies on the concept of a *geodesic path*: a path between two actors in C is a *geodesic path* (g) if it is the shortest path, requiring the fewest number of intermediaries, between those actors. An actor's betweenness is the proportion of *geodesics* between each pair of actors in the network that pass through that actor. Calculation of betweenness for actor i in C begins by computing b_i :

$$b_i = \frac{1}{2} \sum_{a \neq i}^K \sum_{b \neq i, a}^K \frac{g_{aib}}{g_{ab}}$$

where $K = I + J$, g_{ab} is the number of g s from Actor a to Actor b , where a and b are any actors in C , and g_{aib} is the number of g s from a to b that pass through i . b_i is then normalized by the maximum possible betweenness for any actor, given the actor's mode (i or j) and the size thereof. For all i in C , this normalization is achieved first by computing:

$$b_{i \max} = \frac{1}{2} [J^2(s+1)^2 + J(s+1)(2t-s-1) - t(2s-t+3)]$$

where s is equal to the integer resulting from the division $(I-1)/J$ and t is the integer remainder resulting from the division $(I-1)/J$ for a given computation of s . For C , the betweenness (b^*) of group i is given by:

$$b_i^* = \frac{b_i}{b_{i \max}}.$$

In each regression, we use a set of control variables that accounts for explanations for interest group influence besides the composition of a group's coalition portfolio. First, we account for the possibility that interest groups are more influential when they have access to inter-organizational networks other than coalition networks. Specifically, interest groups may be more influential when they achieve desirable positions in networks of communication among other interest groups (Carpenter *et al.*, 2004; Heaney, 2006). We draw these data on *Communication Network Betweenness* from personal interviews with the groups.

Second, we include a variable for the *Number of Registered Lobbyists Working on Medicare*. We use this variable based on the expectation that when groups devote more effort to lobbying they have greater influence over policy, other things equal (Bauer *et al.*, 1963; for a contrary view, see McKay, 2012). We use information provided by groups on their lobbying reports to the US Senate, Office of Public Records (2001–2005) to determine the number of lobbyists dealing specifically with Medicare. Other commonly available measures, such as total dollars expended on lobbying, would inappropriately capture lobbying expenditures unrelated to Medicare issues.



Third, we include a variable for whether or not an interest group *Has a Political Action Committee*. Interest groups with political action committees may be able to command greater attention from legislators than those without them (Hall and Wayman, 1990), which may be leveraged for policy influence. We obtained these data from the Center for Responsive Politics (2012).

Fourth, we include a variable for the *Political Party Lean* of the interest group. Although interest groups often prefer to officially maintain a nonpartisan posture, their behavior usually suggests stronger connections with one party than with the other (Greenstone, 1969; Koger and Victor, 2009). We use this variable based on the expectation that groups benefit if they are linked to the party in control of Congress, other things equal. As the Republican Party controlled both houses of Congress during the period of our study (2003–2006), we expect that group connections with Republicans are likely to translate into more policy influence than are connections with Democrats. This variable is based on interest group self-ratings in our personal interviews.

Fifth, we include a variable for whether or not the group was an *Endorser of the MMA* during the enactment debate (US House Committee on Ways and Means, 2003). We use this variable because of statements by the Republican leadership, as part of the so-called K Street Project, that groups supporting the Republican Party agenda would be rewarded, whereas those that did not would be frozen out of the policy process (Confessore, 2003). Thus, we expect that interest groups that endorsed the MMA would have greater influence over the policy process than those that did not, other things equal.

Sixth, we include a variable for the *Organization's Age in Years*. We use this variable based on the expectation that older organizations have greater status and prestige than younger organizations (Hannan and Freeman, 1993), which may be translated into influence. We draw these data from the organizations' Web sites.

Finally, we include variables for whether an interest group represents citizens' interests (*Citizens Advocacy Organization*) and for whether an interest group represents business interests (*Business Advocacy Organization*). These variables account for the long-documented advantage that business interests have over other types of groups in the policy process (Schattschneider, 1960; Schlozman *et al*, 2012). We classified organizations based on information from organizational Web pages and interviews with organizational representatives.

We test each hypothesis independently and in conjunction with the other hypotheses in the study. Given that the number of coalitions, the size of coalitions and network position are intercorrelated with one another⁶, estimating a series of models – rather than a single model – is necessary to ensure that our results are not an artifact of multicollinearity among these variables. Model 1 provides our base model without any coalition portfolio variables. Model 2 tests the hypothesis for the number of coalitions, Model 3 tests the hypothesis for coalition size, and Model 4 tests the hypothesis for network position. Models 5, 6 and 7 test these hypotheses in conjunction with one another.⁷ Models 8 through 14 repeat the specifications of the



first set of models, but instead switch to *Change in Interest Group Influence* as the dependent variable, along with changes in the time-varying independent variables.

Results

The distributions of influence citations obtained from the interviews – which are the dependent variables in our regression analyses – are reported in Figure 1. The results of our interviews revealed that there was a difference between the levels of influence exerted by interest groups during enactment and during implementation. The distribution of influence in Figure 1(a) (enactment) is shifted slightly further to the right when compared with Figure 1(b) (implementation). On average, each interest group received 19.55 influence citations during enactment, but only 17.04 during implementation. These results reveal that interest groups are believed to exert slightly more influence over policy during the enactment, but are still widely believed to be influential during implementation.

Not *all* interest groups were more influential during enactment than during implementation. Groups varied such that some groups exerted more influence during enactment, whereas others exerted more influence during implementation. The distribution of changes in influence is plotted in Figure 1(c). The changes are skewed slightly to the left. Still, the distribution is approximately normal.

We estimate a series of regression models on the distributions reported in Figure 1. The results of estimating Models 1 through 7 are reported in Table 1. Our first hypothesis, that an interest group's influence increases with each coalition that it joins, is not supported in any model. Similarly, our second hypothesis, that an interest group's influence expands along with the average size of coalitions that it joins, is not supported in any specification. The converse of this hypothesis – that interest groups are more influential when they join smaller coalitions – is supported in Model 5, but not in the other models in which it is tested (Models 3 and 7). However, our third hypothesis, that groups gain influence when their coalition portfolios afford them a position between other groups in the coalition network, is supported in all three models in which it is tested: Models 4, 6 and 7. This result implies that betweenness augments interest group influence when it appears in the regression in comparison with control variables and while holding constant the number and/or size of coalitions in a group's portfolio.

Several control variables in the model are significant predictors of levels of influence. *Communication Network Betweenness* and *Business Advocacy Organization* are positive and significant, as expected, in all seven specifications of the regression. *Registered Lobbyists Working on Medicare* is significant only in Model 4. We find no statistically significant results for *Has a Political Action Committee*, *Political Party Lean*, *Endorser of the MMA*, *Organizational Age in Years* or *Citizens Advocacy Organization*.

The results of estimating Models 8 through 14 – which account for changes in levels of influence – confirm the conclusions drawn from the results of Models 1

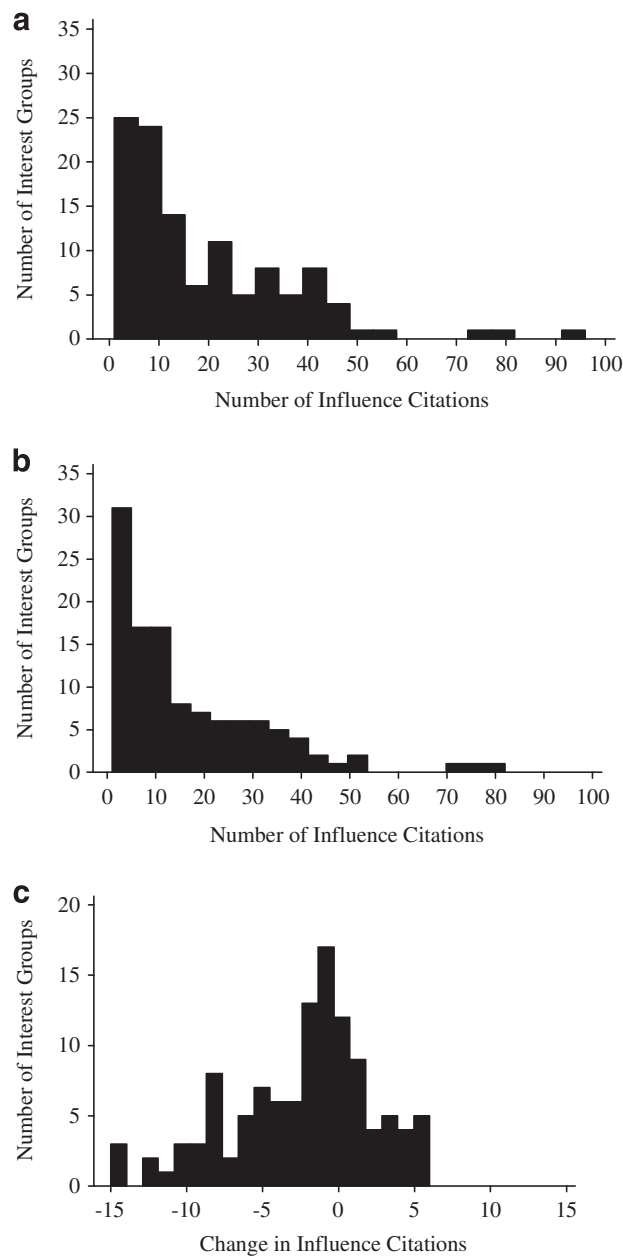


Figure 1: The distribution of Interest Group Influence. (a) Influence during enactment period; (b) Influence during implementation period; (c) Changing influence over the policy process.

through 7 with respect to the focal hypotheses of the article. Our third hypothesis is supported in all instances, but our first and second hypotheses fail to receive any confirmation. Thus, *Change in Coalition Network Betweenness* predicts *Change in Interest Group Influence*, even after controlling for changes in other aspects of the

**Table 1:** Regression models of interest group influence (panel negative binomial model with random effects)

<i>Independent variable</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	<i>Mean (standard deviation)</i>	<i>Per cent imputed</i>
<i>Number of Coalitions</i>	—	−0.002 (0.007)	—	—	0.011 (0.010)	−0.008 (0.007)	0.001 (0.010)	3.122 (2.971)	0.000
<i>Average Coalition Size</i>	—	—	−0.006 (0.003)	—	−0.009* (0.004)	—	−0.008 (0.005)	8.187 (6.542)	0.000
<i>Coalition Network Betweenness</i>	—	—	—	7.272*** (1.876)	—	7.936*** (1.936)	7.490*** (1.944)	0.008 (0.013)	0.000
<i>Communication Network Betweenness</i>	2.737* (1.280)	2.686* (1.293)	2.758* (1.282)	3.992** (1.311)	3.032* (1.302)	3.899** (1.317)	4.087** (1.322)	0.014 (0.021)	11.304
<i>Registered Lobbyists Working on Medicare (average number per 6-month period)</i>	0.117 (0.007)	0.011 (0.008)	0.010 (0.007)	0.016* (0.007)	0.012 (0.008)	0.015 (0.008)	0.015 (0.008)	3.502 (4.059)	19.565
<i>Has a Political Action Committee (Yes = 1, No = 0)</i>	0.144 (0.118)	0.151 (0.120)	0.173 (0.119)	0.092 (0.117)	0.153 (0.120)	—	0.127 (0.119)	0.487 (0.501)	0.000
<i>Political Party Lean (5-point scale, 1 = Democratic, 5 = Republican)</i>	0.035 (0.080)	0.034 (0.081)	0.041 (0.081)	0.057 (0.078)	0.049 (0.081)	0.051 (0.079)	0.065 (0.079)	3.405 (0.895)	11.304
<i>Endorser of the MMA (Yes = 1, No = 0)</i>	0.155 (0.162)	0.159 (0.163)	0.156 (0.163)	0.092 (0.157)	0.135 (0.162)	0.109 (0.159)	0.090 (0.158)	0.461 (0.500)	0.000
<i>Organizational Age in Years</i>	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)	−0.000 (0.002)	0.000 (0.002)	0.000 (0.002)	0.000 (0.002)	50.157 (41.405)	0.000
<i>Citizens Advocacy Organization (Yes = 1, No = 0)</i>	−0.089 (0.221)	−0.081 (0.224)	−0.054 (0.223)	−0.192 (0.215)	−0.076 (0.222)	−0.198 (0.216)	−0.158 (0.217)	0.170 (0.376)	0.000

**Table 1:** (Continued)

Independent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Mean (standard deviation)	Per cent imputed
<i>Business Advocacy Organization</i> (Yes = 1, No = 0)	0.443* (0.188)	0.444* (0.188)	0.472* (0.189)	0.447* (0.014)	0.480* (0.188)	0.506** (0.177)	0.481** (0.184)	0.530 (0.500)	0.000
<i>Constant</i>	17.231 (706.111)	17.821 (891.831)	17.164 (1,094.628)	16.905 (406.799)	16.750 (615.136)	16.424 (313.167)	16.434 (313.167)	—	—
<i>R</i>	5.674×10 ⁷ (4.010×10 ⁹)	1.010×10 ⁷ (9.050×10 ⁹)	5.318×10 ⁷ (5.820×10 ⁹)	4.900×10 ⁷ (1.990×10 ⁹)	3.665×10 ⁷ (2.250×10 ⁹)	2.873×10 ⁷ (9.000×10 ⁸)	6.064×10 ⁷ (2.820×10 ⁹)	—	—
<i>S</i>	1.784*** (0.241)	1.764*** (0.242)	1.751*** (0.237)	1.908*** (0.262)	1.788*** (0.245)	1.864*** (0.256)	1.890*** (0.260)	—	—
Log likelihood	-760.198	-760.158	-758.686	-752.661	-758.070	-752.465	-750.589	—	—
Likelihood ratio χ^2	35.090***	35.040***	37.850***	51.740***	39.53***	51.390***	55.570***	—	—
Likelihood ratio degrees of freedom	8	9	9	9	10	9	11	—	—

Note: ***, **, * show significance at $P \leq 0.001$, $P \leq 0.010$, $P \leq 0.050$, respectively; Number of Groups = 115; Number of Periods = 2; Dependent variable mean = 18.296; Standard deviation = 16.677.



coalition portfolio. With respect to the control variables, *Change in Communication Network Betweenness* is positive and statistically significant in each model, as with the case in the regression on influence levels. *Change in Registered Lobbyists Working on Medicare*, *Change in Political Action Committee*, and *Citizens Advocacy Organization* exhibit inconsistent effects, appearing as significant in some models, but not in others. The remaining variables – *Political Party Lean*, *Endorser of the MMA*, and *Organizational Age in Years in 2003*, and *Business Advocacy Organization* – are insignificant in every specification in Table 2.

A skeptical reader may be concerned with the possibility of an endogenous relationship between coalition participation and interest group influence (Fowler *et al.*, 2011). For example, if the most influential interest groups are also the coalition partners that are most sought after *and confirmed as members of the coalition*, then the direction of the relationship between coalition participation and influence could be incorrectly specified in our model. However, there are several reasons not to expect reverse causation in this case. First, even if the most influential groups are most sought after by coalitions, they may have good reasons not to cooperate with other groups in coalitions. Instead, they may prefer to wield influence unencumbered by the constraints of coalition partners, as was the case for the AARP during the enactment of the MMA (but not during implementation). Second, some coalition leaders may prefer not to have highly powerful actors in their coalitions for fear that these actors may exert disproportionate control *within* the coalition. Third, coalitions may tend to be ‘weapons of the weak’ in the sense that weaker groups prefer to band together in coalitions in order to compensate for other disadvantages that they suffer in the policy process, as Strolovitch (2007, pp. 181–182) argues. Thus, although it is possible that there are instances in which a coalition’s composition is driven partly based on the influence reputations of individual groups, there is little reason to believe that such instances in fact introduce systematic endogeneity to the model.

Beyond our theoretical expectations, the available evidence suggests that ‘reverse causality’ is not present in our case. First, if reverse causality were present then, at a minimum, we would expect the coefficient on *Number of Coalitions* to be significant in Model 2. That is, if coalition members are selected on the basis of their influence level then the *Number of Coalitions* should appear to be a determinant of influence level. However, *Number of Coalitions* is not significant in Model 2 or in any other model that we estimate. Second, we test this idea more formally by estimating a negative binomial regression in which the dependent variable is the *Number of Coalitions* and *Interest Group Influence* is an independent variable, along with the other control variables specified above. *Interest Group Influence* is not a statistically significant predictor of *Number of Coalitions* in this equation.⁸ Thus, while it is imaginable that reverse causation could be present in our case, the available arguments and evidence suggests that it is not a problem here.

A skeptical reader may further be concerned that these results are, in part, a function of the criteria used for selecting interest groups into the study. To address

**Table 2:** Regression models of change in interest group influence (ordinary least squares with robust standard errors)

<i>Independent variable</i>	(8)	(9)	(10)	(11)	(12)	(13)	(14)	<i>Mean (standard deviation)</i>	<i>Per cent imputed</i>
<i>Change in Number of Coalitions</i>	—	0.236 (0.155)	—	—	0.194 (0.166)	0.027 (0.150)	0.014 (0.157)	2.557 (2.569)	0.000
<i>Change in Average Coalition Size</i>	—	—	0.066 (0.058)	—	0.045 (0.059)	—	0.017 (0.057)	5.647 (7.214)	0.000
<i>Change in Coalition Network Betweenness</i>	—	—	—	118.301*** (27.057)	—	116.630*** (28.305)	115.432*** (28.655)	0.001 (0.014)	0.000
<i>Change in Communication Network Betweenness</i>	91.892*** (23.926)	99.202*** (28.289)	91.558*** (24.453)	118.795*** (20.994)	97.680*** (28.291)	119.257*** (21.914)	118.490*** (21.975)	0.001 (0.012)	11.304
<i>Change in Registered Lobbyists Working on Medicare</i> (average number per 6-month period)	-0.162* (0.076)	-0.124 (0.081)	-0.176* (0.077)	0.049 (0.091)	-0.140 (0.083)	0.027 (0.093)	0.019 (0.096)	0.416 (2.232)	19.565
<i>Change in Political Action Committee (Added PAC = 1, No change = 0, Closed PAC = -1)</i>	2.147 (1.124)	1.612 (1.228)	2.240* (1.129)	0.919 (1.043)	1.769 (1.239)	0.875 (1.092)	0.940 (1.096)	0.052 (0.223)	0.000



<i>Political Party Lean</i> (5-point scale, 1 = Democratic, 5 = Republican)	-0.535 (0.620)	-0.544 (0.613)	-0.550 (0.612)	-0.854 (0.549)	-0.553 (0.610)	-0.850 (0.548)	-0.850 (0.551)	3.287 (0.913)	11.304
<i>Endorser of the MMA</i> (Yes = 1, No = 0)	-0.185 (0.808)	-0.419 (0.850)	-0.242 (0.813)	-0.025 (0.768)	-0.416 (0.851)	-0.055 (0.825)	-0.057 (0.830)	0.461 (0.501)	0.000
<i>Organizational Age in Years</i> in 2003	-0.008 (0.011)	-0.011 (0.011)	-0.007 (0.011)	-0.009 (0.011)	-0.010 (0.011)	-0.009 (0.011)	-0.009 (0.011)	48.661 (41.464)	0.000
<i>Citizens Advocacy Organization</i> (Yes = 1, No = 0)	2.101 (1.167)	2.098 (1.127)	2.053 (1.186)	2.191 (0.885)	2.067 (1.153)	2.189* (0.886)	2.177* (0.900)	0.165 (0.373)	0.000
<i>Business Advocacy Organization</i> (Yes = 1, No = 0)	0.227 (1.115)	0.188 (1.124)	-0.025 (1.138)	0.798 (1.104)	0.024 (1.152)	0.786 (1.105)	0.719 (1.127)	0.530 (0.501)	0.000
<i>Constant</i>	-0.810 (1.773)	-1.079 (1.720)	-1.000 (1.790)	-0.215 (1.515)	-1.161 (1.742)	-0.255 (1.495)	-0.293 (1.524)	—	—
<i>F-test statistic</i>	4.410***	3.450***	3.830***	7.800***	3.160**	6.980***	6.250***	—	—
<i>F degrees of freedom</i>	8, 106	9, 105	9, 105	9, 105	10, 104	10, 104	11, 103	—	—
<i>R²</i>	0.139	0.154	0.149	0.249	0.158	0.246	0.250	—	—

Note: ***, **, * show significance at $P \leq 0.001$, $P \leq 0.010$, $P \leq 0.050$, respectively; Number of Groups = 115; Number of Periods = 1; Dependent variable mean = -2.504; Standard deviation = 4.504.



this concern, we considered alternative versions of models estimated based on more restrictive criteria. First, we estimated models using data only from the 106 groups that received at least 3 mentions in the sources we examined (thus excluding 9 groups that had been included only on our judgment). These results yield the same conclusions regarding our focal hypotheses as the full sample. Second, we estimated models using data only from the 86 groups that received at least 4 mentions in the sources we examined. Similarly, these results yield the same conclusion regarding our focal hypotheses as the full sample.⁹ Thus, we demonstrate that our conclusions hold given modest variations in the composition of the sample.

The robust conclusion resulting from these analyses is that interest groups increase their influence over Medicare policy when they construct coalition portfolios that situate them between other groups in the coalition network. The number of coalitions they join does not appear to matter. Neither does the size of their coalitions. Rather, groups tend to be influential when they are positioned strategically in the network of coalitions. A position of betweenness is desirable for gathering information, exercising brokerage, displaying status, and communicating a credible signal of policy alignment among disparate groups. Thus, when interest groups are deciding to become involved in coalitions, they are well advised to consider the overall configuration of interests in the policy area in which they are working. If a coalition places them between interests that are otherwise difficult to connect, then they may be able to reap gains for their constituents by joining that coalition. However, achieving such a position may well be beyond an individual group's reach, as betweenness is determined not only by a group's choices, but also by the structure of the overall coalition network.

Our findings regarding betweenness should not be interpreted prescriptively as implying that groups should not join coalitions that do not improve their betweenness. Many good reasons may exist to join these coalitions. For example, the interest group's leaders may believe deeply in the cause promoted by the coalition. Or, the interest group's lobbyist may owe a favor to the group that is leading the coalition. Nevertheless, our analysis demonstrates that the group is unlikely to improve its own influence by joining such a coalition, other things equal.

An Example of Evolving Portfolios

The discussion of our findings in the preceding section is presented in abstract terms. Yet, our analyses reflect the real political contexts and behavior of the interest group actors that we study. To make this analysis more concrete, we briefly consider the case of Families USA, a liberal political advocacy organization that strives to provide a voice for low-income and other vulnerable health care recipients. Both during enactment and implementation, Families USA raised a critical voice about the MMA and its treatment of vulnerable populations. During enactment, Families USA

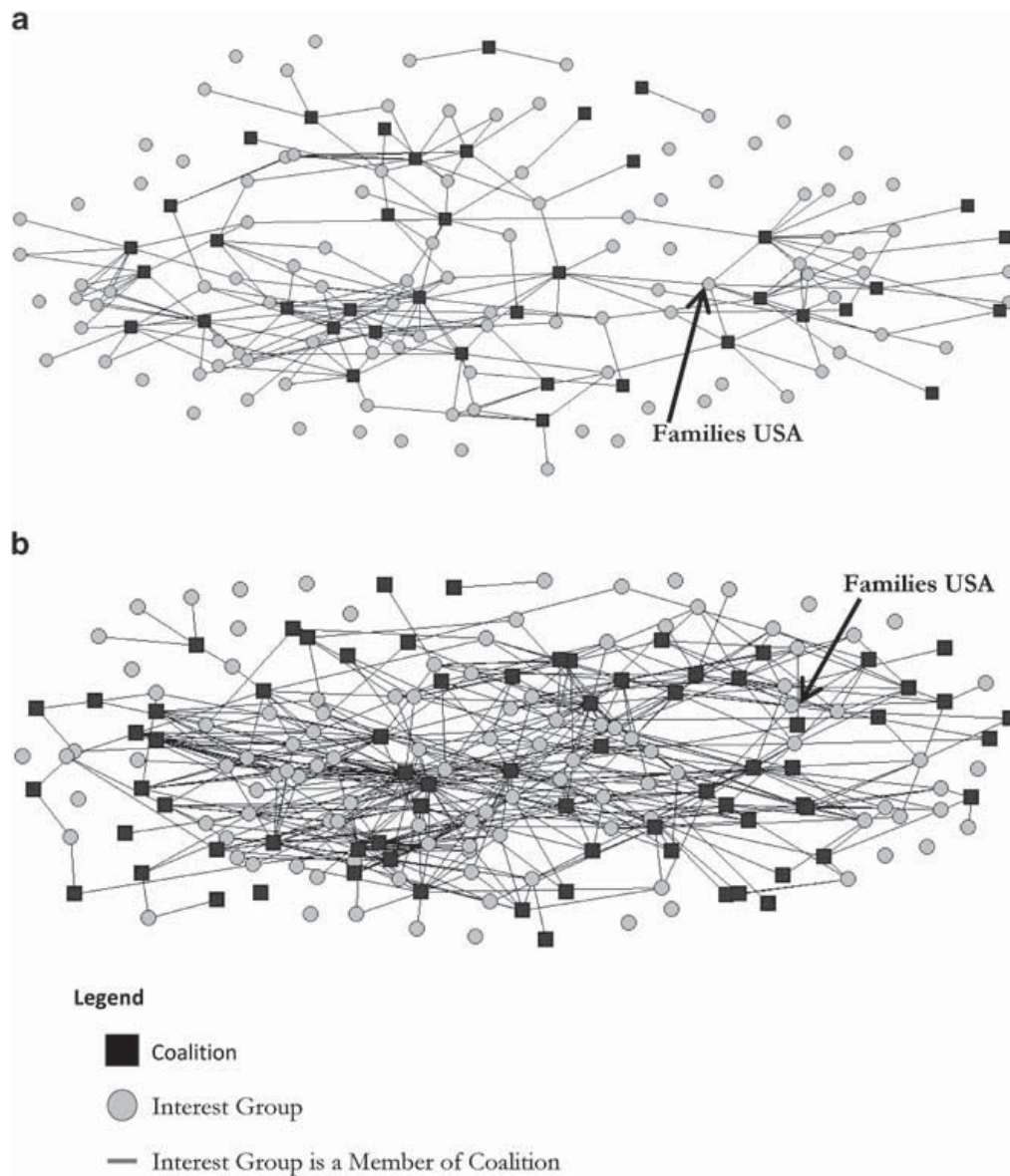


Figure 2: Network of interest groups and coalitions. (a) Enactment period; (b) Implementation period.

composed a portfolio of six MMA-related coalitions. During implementation, its portfolio included eight MMA-related coalitions. Despite a small change in the number of coalitions in its portfolio, the network position of Families USA changed significantly from enactment to implementation. This changed position reduced its ability to exert influence over the policy process.

We illustrate the changing network position of Families USA in Figure 2 using a network visualization algorithm that places nodes more closely together when they are



connected with similar alters and further apart when they are connected with dissimilar alters (Kamada and Kawai, 1989). We can see from this figure that Families USA occupied a desirable position during the enactment debate. It was positioned between opponents of the legislation and communities of actors trying to change the legislation by supporting it, allowing it to assume a brokerage role. However, during implementation, the cohesiveness of MMA opponents dissolved. The network shifted toward groups attempting to make the most of the MMA as enacted. Families USA no longer held as strong a position of betweenness, as it maintained its oppositional posture while other groups did not. The change in Families USA's position was not so much a result of a change in its strategy as it was a result of the changing strategies of many other groups in its network. With the decline in its betweenness, Families USA lost some capacity for brokerage and, thus, lost some influence over the policy process.

Conclusion

Interest group scholars have long recognized the ubiquity of coalitions in advocacy. At their core, coalitions are strategic interactions among multiple groups. However, the extant literature on coalitions models this interaction only to a limited extent, providing little insight into the common situation in which groups balance their commitments across a set of coalitions. In advancing a theory of coalition portfolios, we establish a framework for understand how group participation in multiple coalitions matters for the influence wielded by groups. Our theory models this influence as a product of the strategies of groups as they interact with other interested actors. More generally, our analysis deepens the extent to which interest group politics are understood as taking place within the structures generated by political networks. If advocacy is undertaken by groups acting as a part of a larger community – rather than as isolated, individual actors – then the study of interest group politics requires theories and methods that explicitly take these communities into account.

Our analysis concludes that the composition of coalition portfolios matters in allowing interest groups to influence policy, in part, by helping policymakers to make sense of interest group demands in a complex political network. Specifically, we find that interest groups are more influential when they are situated between other groups in the coalition network, not simply when they accumulate memberships in many coalitions or join large coalitions. This finding is supported both when examining levels of interest group influence and when considering how influence changes over the policy process. However, this finding does not imply that interest groups can easily modify their coalition portfolios to amplify their influence, as their success depends also on the coalitional choices made by other groups.

While we believe that our analysis extended beyond the single law that we analyze in this article, it is important to recognize, nonetheless, that our conclusions are based



on a case study. The MMA was a large and complex piece of legislation that attracted the attention of a diverse community of interested actors. Under these conditions, it seems extremely valuable for advocates to build coalition portfolios with high betweenness. However, when dealing with less complex and smaller communities of advocates, betweenness may not prove as valuable. In order to establish the generality of our conclusions, it is essential for future research to examine the value of coalition portfolios in a variety of other legislative debates.

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Notes

- 1 We set the thresholds of 120 interest groups (for general lobbying expenses) and 50 groups (for lobbying the Centers for Medicare and Medicaid Services) in an effort to make sure that the most important players in the field were identified while ignoring the less important organizations.
- 2 For example, we added the National Association for the Advancement of Colored People, which did not meet our criteria, but which we judged to be important due to its work during implementation in disseminating information to minority communities about accessing Part D. As a robustness check to the statistical analysis reported below, we estimate versions of our models with and without the nine groups that were included on the basis of our judgment. We find no differences in conclusions drawn regarding our focal hypotheses depending on whether the groups from the judgment sample are included. The results of our estimates without the judgment sample are provided in online appendices D and E.
- 3 The list of the groups included in this study is provided in Online Appendix A.
- 4 A complete list of the interview questions is provided in Online Appendix A.
- 5 As a robustness check to the statistical analysis reported below, we estimate our models with and without a variable for whether the interest group was included both in the set of coalitions and the set of interest groups. We found that the inclusion of this variable had no statistically discernible effect on the coefficients of other variables in the model. The alternative version of regression results with this variable is provided in online appendices F and G.
- 6 We report correlation matrices for the variables included in the regression models in online appendices B and C.
- 7 The variable *Has Political Action Committee* is not included in Model 6 due to problems with convergence when this variable is included in the model.
- 8 The results of this analysis are reported in Online Appendix H.



9 The results for 106 groups are reported in online appendices D and E. The results for 86 groups are reported in online appendices I and J.

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Supplementary information accomplishes this article on the *Interest Groups & Advocacy* website (www.palgrave-journals.com/iga)

Guide to the Online Appendices

Supplemental Information Published Online in Conjunction with
“Coalitions Portfolios and Interest Group Influence over the Policy Process,”

Interest Groups & Advocacy

By Michael T. Heaney and Geoffrey M. Lorenz

Online Appendix A. This appendix consists of the interview instrument for all interviews. The first section of the instrument is the interview script read to all respondents. The second section of the instrument is a form that respondents marked during Part B of the interview. The second section contains the list of interest groups included in the study.

Online Appendix B. Correlation Matrix for Panel Data

Online Appendix C. Correlation Matrix for First-Difference Data

Online Appendix D. Regression Models of Interest Group Influence – Excluding Judgment Sample. Negative Binomial Estimator with Panel Data. Note that, in Model (6), *Has Political Action Committee* and *Endorser of the Medicare Modernization Act* have been omitted due to problems with convergence when they are included in the model.

Online Appendix E. Regression Models of Change in Interest Group Influence – Excluding Judgment Sample. Ordinary Least Squares with Robust Standard Errors.

Online Appendix F. Regression Model of Interest Group Influence – Including Variable for Dual Group-Coalition

Online Appendix G. Regression Models of Change in Interest Group Influence – Including Variable for Dual Group-Coalition. Ordinary Least Squares with Robust Standard Errors

Online Appendix H. Regression Model of Number of Coalitions. Negative Binomial Estimator with Panel Data

Online Appendix I. Regression Models of Interest Group Influence – Limited Sample of Top 86 Organizations. Negative Binomial Estimator with Panel Data. Note that in Model (3), *Endorser of the Medicare Modernization Act* has been omitted due to problems with convergence when it is included in the model. In Model (6), *Has a Political Action Committee* has been omitted due to problems with convergence when it is included in the model.

Online Appendix J. Regression Models of Interest Group Influence – Limited Sample of Top 86 Organizations. Ordinary Least Squares with Robust Standard Errors

Online Appendix A: Interview Instrument

Study on the Implementation of the Medicare Modernization Act of 2003

Michael T. Heaney, Ph.D., Principal Investigator

Summer 2006

Organization Name: _____

Respondent Name: _____

Respondent Title: _____

Date/Time/Location: _____

Phone / E-mail: _____

Part A. I would like to begin by asking a few open-ended questions about the politics and policies of Medicare over the past few years.

1. From the perspective of your organization, what are the major weaknesses of the Medicare Modernization Act? In what ways has its implementation been ineffective?
2. From the perspective of your organization, what are the major strengths of the Medicare Modernization Act? In what ways has its implementation been effective?
3. How have the major issues of interest to your organization changed in moving from enactment to implementation? Are you working on the same types of problems, or has your policy focus been transformed?
4. What are the major government agencies (such as CMS or the FDA) that you have interacted with during the implementation process? How have your interactions with these agencies changed since enactment?
5. When interacting with members of Congress and their staffs, do you focus your attention (a) almost entirely on Republican members, (b) mostly on Republican members, but sometimes on Democratic members, (c) about evenly on Democrats and Republicans, (d) mostly on Democratic members, but sometimes on Republican members, or (e) almost entirely on Democratic members?
6. Do you find that your relationships with the parties have changed over the implementation of the Medicare Modernization Act? That is, have you grown closer to one party and more distant from the other, or have your relationships remained about the same?
7. What are the principal ways that you relate to party representatives? For example, is working with the majority and minority leaders offices the way to relate to the parties or, for example, do you relate more directly with the RNC or the DNC?

8. Have you joined any coalitions to influence the implementation of the MMA? If so, please name them and describe their work briefly. Have these coalitions been effective? Why or why not? Has the importance of these coalitions increased or diminished since the passage of the MMA?

9. Have you attempted to use grassroots constituents to influence the implementation of the MMA? If so, please describe the nature of your effort? Would you say that these efforts are central to your lobbying effort or peripheral to your larger strategy?

10. Does your organization use electoral and campaign strategies to bolster its position on Medicare issues? If so, please describe the nature of the strategies.

11. Does your organization provide funding or resources to other organizations in order to promote your position on Medicare issues? If so, please describe the nature of these efforts.

Part B. In the second part of this interview, I would like to ask you about the organizations that you work with on issues relevant to the Medicare Modernization Act, and the issues where you have focused your priorities.

1. Please look at the following list of organizations active in the Medicare policy network. Please place a check mark after the name of all organizations on this list with which your organization discusses Medicare policy matters. Indicate whether these discussions occur occasionally or frequently, and whether they occurred during enactment or during implementation, by checking the corresponding columns.

2. All of the organizations on this list are very active in the Medicare policy area. But I would now like you to indicate which of these organizations stand out as especially influential and consequential in formulating Medicare policy. Please indicate whether you believe that this influence was exerted during enactment, implementation, or both, by checking the corresponding columns.

3. As you know, the ability of some organizations to influence public policy changes considerably as the policy process shifts from enactment to implementation. Are there organizations on this list that have significantly increased their influence, or seen the influence decrease, since implementation of the MMA began? Please place a “plus” or a “minus” sign next to the name of the organization to indicate this change?

4. Are there any organizations that are especially influential and consequential in formulating Medicare policy, in your opinion, who have been omitted from this list? Please write them at the bottom of the form and indicate your discussion patterns and influence assessment.

5. Now I would like to ask about the Medicare issues your organization has focused on. Please look at the following list of issues and tell me if these issues have been major or minor concerns for your organization during the enactment and implementation of the MMA. Please check the corresponding columns.

6. Are there any questions that I have not asked you that you think that I should ask you about the politics of the MMA?

Thank you very much for your time and participation.

Medicare Policy Network, 2003-2006

Code	Interest Group	Check if Communicated with During Enactment 2003		Check if Communicated with During Implementation 2004-2006		Check if Especially Influential and Consequential	
		<i>Occasional</i>	<i>Frequent</i>	<i>Occasional</i>	<i>Frequent</i>	<i>Enact 2003</i>	<i>Implement 2004-06</i>
101	AARP						
102	Academy of Managed Care Pharmacy						
103	Advanced Medical Technology Association						
104	AFL-CIO						
105	Alliance for Retired Americans						
106	Alliance of Specialty Medicine						
107	Alliance to Improve Medicare						
108	Alzheimer's Association						
109	American Academy of Actuaries						
110	American Academy of Family Physicians						
111	American Association for Homecare						
112	American Association of Homes & Services for the Aging						
113	American Association of Orthopaedic Surgeons						
114	American Cancer Society						
115	American Clinical Laboratory Association						
116	American College of Emergency Physicians						
117	American College of Physicians						
118	American College of Surgeons						
119	American Fed. of State, County, & Municipal Employees						
120	American Health Care Association						
121	American Health Quality Association						
122	American Heart Association						
123	American Hospital Association						
124	American Medical Association						
125	American Medical Directors Association						
126	American Nurses Association						
127	American Pharmacists Association						
128	American Physical Therapy Association						
129	American Psychiatric Association						
130	American Society of Clinical Oncology						
131	American Society of Consultant Pharmacists						
132	American Society of Health-System Pharmacists						
133	America's Health Insurance Plans						
134	Association of American Medical Colleges						
135	Biotechnology Industry Organization						
136	Blue Cross & Blue Shield Association						
137	Business Roundtable						
138	Catholic Health Association of the United States						
139	Center for Medicare Advocacy						
140	Concord Coalition						

Medicare Policy Network, 2003-2006

Code	Interest Group	Check if Communicated with During Enactment 2003		Check if Communicated with During Implementation 2004-2006		Check if Especially Influential and Consequential	
		<i>Occasional</i>	<i>Frequent</i>	<i>Occasional</i>	<i>Frequent</i>	<i>Enact 2003</i>	<i>Implement 2004-06</i>
141	Consumers Union						
142	Disease Management Association of America						
143	Employee Benefits Research Institute						
144	Employers Coalition on Medicare						
145	Families USA						
146	Federated Ambulatory Surgery Association						
147	Federation of American Hospitals						
148	Generic Pharmaceutical Association						
149	Geographic Equity in Medicare Coalition						
150	Healthcare Leadership Council						
151	HSA Coalition / Archer MSA Coalition						
152	Long Term Care Pharmacy Alliance						
153	Medical Group Management Association						
154	Medicare Rights Center						
155	National Alliance for the Mentally Ill						
156	National Association for Home Care & Hospice						
157	National Assn. for the Advancement of Colored People						
158	National Association of Chain Drug Stores						
159	National Association of Community Health Centers						
160	National Association of Health Underwriters						
161	National Association of Manufacturers						
162	National Assn. of Public Hospitals and Health Systems						
163	National Association of Retired Federal Employees						
164	National Coalition for Cancer Survivorship						
165	National Comm. to Preserve Social Security & Medicare						
166	National Community Pharmacists Association						
167	National Council on the Aging						
168	National Education Association						
169	National Federation of Independent Business						
170	National Governors Association						
171	National Multiple Sclerosis Society						
172	National Rural Health Association						
173	Pharmaceutical Care Management Association						
174	Pharmaceutical Research and Manufacturers of America						
175	Public Citizen						
176	Seniors Coalition						
177	U.S. Chamber of Commerce						
178	United Auto Workers						
179	Visiting Nurse Associations of America						
180	Washington Business Group on Health						

Medicare Policy Network, 2003-2006

Code	Business Firm	Check if Communicated with During Enactment 2003		Check if Communicated with During Implementation 2004-2006		Check if Especially Influential and Consequential	
		<i>Occasional</i>	<i>Frequent</i>	<i>Occasional</i>	<i>Frequent</i>	<i>Enact 2003</i>	<i>Implement 2004-06</i>
201	Aetna						
202	Amgen						
203	Bristol-Myers Squibb						
204	Caremark Rx						
205	Caterpillar						
206	Cigna						
207	CVS						
208	Easter Seals						
209	Eli Lilly						
210	Express Scripts						
211	General Motors Corporation						
212	GlaxoSmithKline						
213	Guidant						
214	Humana						
215	Johnson & Johnson						
216	Medco						
217	Medtronic						
218	Merck						
219	Novartis						
220	Pacificare						
221	Pfizer						
222	United Health Group						
223	Wal-Mart						
224	WellPoint						
Code Think Tank							
301	American Enterprise Institute						
302	Brookings Institution						
303	Cato Institute						
304	Center for Health Transformation						
305	Center for Studying Health Systems Change						
306	Center on Budget & Policy Priorities						
307	Heritage Foundation						
308	Kaiser Family Foundation						
309	Progressive Policy Institute						
310	Project HOPE						
311	Urban Institute						

Medicare Issues, 2003-2006

Code	Issue	Enactment, 2003		Implementation, 2004-06	
		Major	Minor	Major	Minor
1	Ambulatory Surgical Centers				
2	Clawback Provisions				
3	Clinical Laboratory Services and Reimbursement				
4	CMS Advertising / Public Relations				
5	Cost Containment				
6	Demonstration Projects and Studies				
7	Dialysis				
8	Dual-Eligible Recipients / Low-Income Recipients				
9	Durable Medical Equipment				
10	Generic Drugs				
11	Health Savings Accounts				
12	Home Health, Hospice, and Long-Term Care				
13	Hospitals – CRITICAL ACCESS HOSPITALS				
14	Hospitals – DISPROPORTIONATE SHARE HOSPITALS				
15	Hospitals – PHYSICIAN-OWNED SPECIALTY HOSPITALS				
16	Hospitals – REIMBURSEMENT				
17	Immigrant Benefits / Costs to System				
18	Indirect Medical Education / Graduate Medical Education				
19	Medicare Advantage – DESIGN				
20	Medicare Advantage – INSURER PARTICIPATION				
21	Medicare Parts A and B – CO-PAYMENTS				
22	Medicare Parts A and B – INCOME-RELATING / MEANS-TESTING				
23	Medicare Parts A and B – NON-PHYSICIAN REIMBURSEMENT				
24	Medicare Parts A and B – OUTPATIENT DRUG COVERAGE				
25	Medicare Parts A and B – PREMIUMS				
26	Medigap				
27	Oncology Services and Reimbursement				
28	Physicians – REIMBURSEMENT				
29	Premium Support / Comparative Cost Adjustment				
30	Prescription Drug – DISCOUNT CARD				
31	Prescription Drug – (RE)IMPORTATION				
32	Prescription Drug – VOLUME DISCOUNTS				
33	Prescription Drug Benefit (Part D) – DESIGN				
34	Prescription Drug Benefit (Part D) – ENROLLMENT				
35	Prescription Drug Benefit (Part D) – FORMULARIES				
36	Prescription Drug Benefit (Part D) – IMPLEMENTATION				
37	Prescription Drug Benefit (Part D) – OVERALL COST OF BENEFIT				
38	Prescription Drug Benefit (Part D) – PHARMACY BENEFIT MANAGERS				
39	Preventive Health Care Services				
40	Quality Standards and Improvement				
41	Recipient Appeals Process				
42	Retiree Health Benefits				
43	Rural Health Care				
44	Skilled Nursing Facilities				
45	Therapy Caps				

Online Appendix B: Correlation Matrix for Panel Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) <i>Interest Group Influence</i>											
(2) <i>Number of Coalitions</i>	0.372***										
(3) <i>Average Coalition Size</i>	0.254***	0.601***									
(4) <i>Coalition Network Betweenness</i>	0.282***	0.595***	0.223***								
(5) <i>Communication Network Betweenness</i>	0.526***	0.336***	0.187*	0.240***							
(6) <i>Registered Lobbyists Working on Medicare</i>	0.415***	0.167*	0.069	0.213**	0.462***						
(7) <i>Has a Political Action Committee</i>	0.292***	0.327***	0.294***	0.153*	0.045	0.173					
(8) <i>Political Party Lean</i>	0.130*	0.036	0.165*	-0.077	0.142*	0.007	0.171**				
(9) <i>Endorser of the Medicare Modernization Act</i>	0.231***	0.253***	0.182**	0.181***	0.274***	0.192	0.164	0.228***			
(10) <i>Organizational Age in Years</i>	0.098	0.215*	0.036	0.145*	0.087	0.229	0.266**	0.036	0.071		
(11) <i>Citizens Advocacy Organization</i>	-0.137*	-0.030	-0.092	0.025	0.071	-0.124	-0.348***	-0.261***	-0.092	-0.105	
(12) <i>Business Advocacy Organization</i>	0.312***	0.127	0.312	0.047	0.016	0.128	0.307***	0.381***	0.311***	-0.120	-0.434***

Note. *** $p \leq 0.001$, ** $p \leq 0.010$, * $p \leq 0.050$; Number of Groups = 115; Number of Periods = 2.

Online Appendix C: Correlation Matrix for First-Difference Data

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) <i>Change in Interest Group Influence</i>											
(2) <i>Change in Number of Coalitions</i>	0.065										
(3) <i>Change in Average Coalition Size</i>	0.062	0.281**									
(4) <i>Change in Coalition Network Betweenness</i>	0.282**	0.358***	0.136								
(5) <i>Change in Communication Network Betweenness</i>	0.245**	-0.161	-0.020	-0.191*							
(6) <i>Change in Registered Lobbyists Working on Medicare</i>	-0.077	-0.091	0.076	-0.291*	-0.009						
(7) <i>Change in Political Action Committee</i>	0.149	0.163	-0.034	0.141	0.071	0.024					
(8) <i>Political Party Lean</i>	-0.169	0.115	0.123	0.171	-0.136	-0.173	-0.014				
(9) <i>Endorser of the Medicare Modernization Act</i>	-0.091	0.242**	0.141	-0.039	-0.137	0.032	0.018	0.219*			
(10) <i>Organizational Age in Years</i>	-0.120	0.210*	-0.082	-0.006	-0.003	0.146	-0.099	0.027	0.071		
(11) <i>Citizens Advocacy Organization</i>	0.175	-0.005	-0.090	0.069	-0.152	-0.038	0.106	-0.246**	-0.083	-0.093	
(12) <i>Business Advocacy Organization</i>	-0.106	0.055	0.294*	-0.136	-0.030	0.103	-0.014	0.390***	0.311***	-0.120	-0.426***

Note: *** $p \leq 0.001$, ** $p \leq 0.010$, * $p \leq 0.050$; Number of Groups = 115; Number of Periods = 1.

Online Appendix D: Regression Models of Interest Group Influence – Excluding Judgment Sample
Negative Binomial Estimator with Panel Data

Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Mean (std. dev.)
<i>Number of Coalitions</i>	---	-0.003 (0.007)	---	---	0.009 (0.010)	-0.008 (0.007)	0.000 (0.010)	3.269 (3.013)
<i>Average Coalition Size</i>	---	---	-0.007 (0.004)	---	-0.009* (0.005)	---	-0.008 (0.005)	8.406 (6.525)
<i>Coalition Network Betweenness</i>	---	---	---	6.981*** (1.880)	---	7.756*** (1.930)	7.240*** (1.945)	0.008 (0.013)
<i>Communication Network Betweenness</i>	2.536* (1.281)	2.452 (1.295)	2.559* (1.283)	3.750** (1.313)	2.801* (1.304)	3.738* (1.305)	3.831** (1.325)	0.015 (0.022)
<i>Registered Lobbyists Working on Medicare</i> (Average Number per Six-Month Period)	0.012 (0.007)	0.011 (0.008)	0.010 (0.007)	0.017** (0.007)	0.012 (0.008)	0.015* (0.008)	0.015* (0.008)	3.530 (4.170)
<i>Has a Political Action Committee</i> (Yes=1, No = 0)	0.127 (0.120)	0.139 (0.123)	0.159 (0.122)	0.082 (0.120)	0.141 (0.123)	---	0.115 (0.122)	0.500 (0.501)
<i>Political Party Lean</i> (5-point scale, 1=Democratic, 5=Republican)	0.015 (0.083)	0.013 (0.083)	0.021 (0.083)	0.036 (0.081)	0.029 (0.083)	0.034 (0.081)	0.044 (0.082)	3.438 (0.893)
<i>Endorser of the Medicare Modernization Act</i> (Yes=1, No = 0)	0.125 (0.166)	0.132 (0.168)	0.126 (0.167)	0.064 (0.162)	0.108 (0.167)	---	0.062 (0.163)	0.462 (0.500)
<i>Organizational Age in Year</i>	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)	0.000 (0.002)	0.000 (0.002)	0.001 (0.002)	0.000 (0.002)	50.703 (42.095)
<i>Citizens Advocacy Organization</i> (Yes=1, No = 0)	-0.047 (0.230)	-0.033 (0.232)	-0.006 (0.232)	-0.149 (0.224)	-0.027 (0.231)	-0.128 (0.221)	-0.109 (0.226)	0.165 (0.372)
<i>Business Advocacy Organization</i> (Yes=1, No = 0)	0.469* (0.191)	0.471* (0.192)	0.501** (0.193)	0.472* (0.186)	0.509* (0.192)	0.564*** (0.169)	0.509** (0.188)	0.528 (0.500)
<i>Constant</i>	17.384 (384.195)	16.406 (457.912)	19.335 (341.135)	17.381 (470.468)	16.623 (464.110)	16.954 (373.991)	18.372 (390.899)	
R	6.063x10 ⁶ (2.330x10 ⁹)	2.249x10 ⁶ (1.030x10 ⁹)	4.280x10 ⁷ (1.460x10 ¹⁰)	7.168x10 ⁶ (3.370x10 ⁹)	2.950x10 ⁶ (1.370 x10 ⁹)	4.474x10 ⁷ (1.670x10 ⁹)	1.950x10 ⁷ (7.640x10 ⁹)	
S	1.811 (0.256)	1.795 (0.256)	1.787 (0.252)	1.936 (0.276)	1.820 (0.260)	1.894 (0.270)	1.915 (0.273)	
Log Likelihood	-708.147	-708.041	-706.464	-701.225	-705.999	-700.890	-699.016	
Likelihood Ratio χ^2	31.08***	31.13***	34.22***	46.18***	35.48***	46.10***	50.30***	
Likelihood Ratio Degrees of Freedom	8	9	9	9	10	8	11	

Note: *** p ≤ 0.001, ** p ≤ 0.010, * p ≤ 0.050; Number of Groups = 106; Number of Periods = 2; Dependent variable mean = 19.132, std. dev. = 16.997.

Online Appendix E: Regression Models of Change in Interest Group Influence – Excluding Judgment Sample
Ordinary Least Squares with Robust Standard Errors

Independent Variable	(8)	(9)	(10)	(11)	(12)	(13)	(14)	Mean (std. dev.)
<i>Change in Number of Coalitions</i>	---	0.236 (0.162)	---	---	0.213 (0.171)	0.012 (0.155)	0.017 (0.161)	-2.642 (4.557)
<i>Change in Average Coalition Size</i>	---	---	0.049 (0.061)	---	0.026 (0.062)	---	-0.007 (0.060)	2.689 (2.609)
<i>Change in Coalition Network Betweenness</i>	---	---	---	120.239*** (26.659)	---	119.484*** (27.441)	119.993*** (27.886)	5.657 (7.237)
<i>Change in Communication Network Betweenness</i>	94.100*** (22.721)	101.039*** (26.571)	93.614*** (23.015)	120.610*** (19.726)	100.111*** (26.713)	120.803*** (20.490)	121.129*** (20.543)	0.001 (0.015)
<i>Change in Registered Lobbyists Working on Medicare</i> (Average Number per Six-Month Period)	-0.158* (0.080)	-0.119 (0.085)	-0.168* (0.080)	0.025 (0.090)	-0.128 (0.086)	0.026 (0.093)	0.029 (0.095)	0.001 (0.013)
<i>Change in Political Action Committee</i> (Added PAC=1, No change = 0, Closed PAC=-1)	2.244* (1.083)	1.746 (1.193)	2.320* (1.088)	0.980 (1.005)	1.835 (1.205)	0.962 (1.049)	0.936 (1.046)	0.439 (2.323)
<i>Political Party Lean</i> (5-point scale, 1=Democratic, 5=Republican)	-0.451 (0.668)	-0.464 (0.659)	-0.468 (0.661)	-0.841 (0.592)	-0.472 (0.655)	-0.839 (0.593)	-0.838 (0.595)	0.057 (0.232)
<i>Endorser of the Medicare Modernization Act</i> (Yes=1, No = 0)	0.118 (0.864)	-0.115 (0.908)	0.086 (0.870)	0.341 (0.820)	-0.110 (0.910)	0.327 (0.879)	0.328 (0.885)	3.419 (0.913)
<i>Organizational Age in Years in 2003</i>	-0.009 (0.011)	-0.013 (0.012)	-0.009 (0.011)	-0.011 (0.011)	-0.012 (0.012)	-0.011 (0.012)	-0.011 (0.012)	0.462 (0.501)
<i>Citizens Advocacy Organization</i> (Yes=1, No = 0)	2.023 (1.215)	1.964 (1.152)	1.937 (1.235)	2.044* (0.880)	1.924 (1.181)	2.041* (0.882)	2.051* (0.879)	49.208 (42.163)
<i>Business Advocacy Organization</i> (Yes=1, No = 0)	0.398 (1.169)	0.334 (1.175)	0.186 (1.201)	1.044 (1.158)	0.227 (1.210)	1.036 (1.161)	1.067 (1.190)	0.160 (0.369)
<i>Constant</i>	-1.366 (1.923)	-1.625 (1.857)	-1.464 (1.945)	-0.539 (1.645)	-1.652 (1.880)	-0.558 (1.622)	-0.546 (1.648)	0.528 (0.502)
F-test statistic	5.20***	3.81***	4.45***	8.03***	3.42***	7.28***	6.62***	
F degrees of freedom	8, 97	9, 96	9, 96	9, 96	10, 95	10, 95	11, 94	
R ²	0.138	0.153	0.143	0.257	0.154	0.257	0.257	

Note: *** p ≤ 0.001, ** p ≤ 0.010, * p ≤ 0.050; Number of Groups = 115; Number of Periods = 1; Dependent variable mean = -2.504, std. dev.=4.504.

Online Appendix F: Regression Model of Interest Group Influence
– Including Variable for Dual Group-Coalition
Negative Binomial Estimator with Panel Data

Independent Variable	Coefficient (Std. Err.)
<i>Number of Coalitions</i>	0.001 (0.010)
<i>Average Coalition Size</i>	-0.008 (0.005)
<i>Coalition Network Betweenness</i>	7.479*** (1.942)
<i>Communication Network Betweenness</i>	4.162** (1.322)
<i>Registered Lobbyists Working on Medicare</i> (Average Number per Six-Month Period)	0.014 (0.008)
<i>Has a Political Action Committee</i> (Yes=1, No = 0)	0.126 (0.119)
<i>Political Party Lean</i> (5-point scale, 1=Democratic, 5=Republican)	0.071 (0.078)
<i>Endorser of the Medicare Modernization Act</i> (Yes=1, No = 0)	0.058 (0.158)
<i>Organizational Age in Year</i>	0.001 (0.002)
<i>Citizens Advocacy Organization</i> (Yes=1, No = 0)	-0.130 (0.217)
<i>Business Advocacy Organization</i> (Yes=1, No = 0)	0.449* (0.184)
<i>Dual Group-Coalition</i> (Yes=1, No = 0)	0.379 (0.248)
<i>Constant</i>	16.800 (314.142)
R	4.880x10 ⁶ (1.530x10 ⁹)
S	1.932 (0.267)
Log Likelihood	-749.351
Likelihood Ratio χ^2	58.39***
Likelihood Ratio Degrees of Freedom	12

Note: *** $p \leq 0.001$, ** $p \leq 0.010$, * $p \leq 0.050$;
Number of Groups = 115; Number of Periods = 2;
Dependent variable mean = 18.296, std. dev. = 16.677.

Online Appendix G: Regression Models of Change in Interest Group Influence
– Including Variable for Dual Group-Coalition
Ordinary Least Squares with Robust Standard Errors

Independent Variable	Coefficient (Std. Err.)
<i>Change in Number of Coalitions</i>	0.047 (0.150)
<i>Change in Average Coalition Size</i>	0.028 (0.051)
<i>Change in Coalition Network Betweenness</i>	113.546*** (29.869)
<i>Change in Communication Network Betweenness</i>	126.217*** (20.134)
<i>Change in Registered Lobbyists Working on Medicare</i> (Average Number per Six-Month Period)	0.016 (0.093)
<i>Change in Political Action Committee</i> (Added PAC=1, No change = 0, Closed PAC=-1)	0.372 (1.068)
<i>Political Party Lean</i> (5-point scale, 1=Democratic, 5=Republican)	-0.869 (0.547)
<i>Endorser of the Medicare Modernization Act</i> (Yes=1, No = 0)	0.419 (0.817)
<i>Organizational Age in Years in 2003</i>	-0.016 (0.012)
<i>Citizens Advocacy Organization</i> (Yes=1, No = 0)	2.125* (0.829)
<i>Business Advocacy Organization</i> (Yes=1, No = 0)	0.838 (1.124)
<i>Dual Group-Coalition</i> (Yes=1, No = 0)	-3.653* (1.406)
<i>Constant</i>	0.066 (1.454)
F-test statistic	7.27***
F degrees of freedom	12, 102
R ²	0.298

Note: *** $p \leq 0.001$, ** $p \leq 0.010$, * $p \leq 0.050$;
Number of Groups = 115; Number of Periods = 1;
Dependent variable mean = -2.504, std. dev=4.504.

Online Appendix H: Regression Model of Number of Coalitions
Negative Binomial Estimator with Panel Data

Independent Variable	Coefficient (Std. Err.)
<i>Interest Group Influence</i>	0.007 (0.004)
<i>Communication Network Betweenness</i>	7.189* (2.881)
<i>Registered Lobbyists Working on Medicare</i> (Average Number per Six-Month Period)	-0.021 (0.014)
<i>Has a Political Action Committee</i> (Yes=1, No = 0)	0.593*** (0.138)
<i>Political Party Lean</i> (5-point scale, 1=Democratic, 5=Republican)	-0.083 (0.076)
<i>Endorser of the Medicare Modernization Act</i> (Yes=1, No = 0)	0.261 (0.125)
<i>Organizational Age in Year</i>	0.003*** (0.001)
<i>Citizens Advocacy Organization</i> (Yes=1, No = 0)	0.267 (0.193)
<i>Business Advocacy Organization</i> (Yes=1, No = 0)	0.208 (0.157)
<i>Constant</i>	0.119 (0.333)
R	1.935x10 ⁶ (6.690x10 ⁸)
S	2.614x10 ⁶ (9.040x10 ⁸)
Log Likelihood	-486.594
Likelihood Ratio χ^2	85.06***
Likelihood Ratio Degrees of Freedom	9

Note: *** $p \leq 0.001$, ** $p \leq 0.010$, * $p \leq 0.050$;
Number of Groups = 115; Number of Periods = 2;
Dependent variable mean = 3.122, std. dev. = 2.970.

Online Appendix I: Regression Models of Interest Group Influence – Limited Sample of Top 86 Organizations
Negative Binomial Estimator with Panel Data

Independent Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Mean (std. dev.)
<i>Number of Coalitions</i>	---	-0.004 (0.007)	---	---	0.009 (0.010)	-0.010 (0.007)	0.000 (0.010)	3.465 (3.075)
<i>Average Coalition Size</i>	---	---	-0.007 (0.004)	---	-0.010 (0.005)	---	-0.008 (0.005)	8.689 (6.345)
<i>Coalition Network Betweenness</i>	---	---	---	6.736*** (1.892)	---	7.452*** (1.953)	7.021*** (1.965)	0.009 (0.014)
<i>Communication Network Betweenness</i>	2.705* (1.289)	2.600* (1.305)	2.747* (1.280)	3.863*** (1.317)	2.944* (1.313)	3.724* (1.324)	3.910* (1.329)	0.017 (0.024)
<i>Registered Lobbyists Working on Medicare</i> (Average Number per Six-Month Period)	0.010 (0.007)	0.009 (0.008)	0.009 (0.007)	0.015 (0.007)	0.010 (0.008)	0.013 (0.008)	0.013 (0.008)	3.819 (4.504)
<i>Has a Political Action Committee</i> (Yes=1, No = 0)	0.087 (0.125)	0.101 (0.128)	0.123 (0.126)	0.039 (0.124)	0.105 (0.128)	---	0.077 (0.127)	0.541 (0.500)
<i>Political Party Lean</i> (5-point scale, 1=Democratic, 5=Republican)	-0.003 (0.082)	-0.005 (0.083)	0.005 (0.082)	0.016 (0.080)	0.011 (0.082)	0.011 (0.081)	0.023 (0.080)	3.448 (0.916)
<i>Endorser of the Medicare Modernization Act</i>	0.028 (0.164)	0.037 (0.166)	---	-0.032 (0.551)	0.012 (0.585)	-0.011 (0.594)	-0.031 (0.589)	0.488 (0.535)
<i>Organizational Age in Year</i>	0.001 (0.002)	0.001 (0.002)	0.002 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)	50.680 (42.513)
<i>Citizens Advocacy Organization</i> (Yes=1, No = 0)	0.006 (0.228)	0.023 (0.231)	0.061** (0.224)	-0.094 (0.221)	0.035 (0.228)	-0.079 (0.222)	-0.046 (0.223)	0.169 (0.375)
<i>Business Advocacy Organization</i> (Yes=1, No = 0)	0.539** (0.194)	0.541** (0.195)	0.585 (0.187)	0.551** (0.188)	0.585** (0.195)	0.594** (0.178)	0.589** (0.190)	0.535 (0.500)
<i>Constant</i>	20.013 (239.204)	15.906 (376.689)	16.660 (444.909)	20.150 (178.896)	16.887 (482.564)	17.579 (448.567)	16.860 (366.836)	
R	8.960x10 ⁷ (2.140x10 ⁷)	1.446x10 ⁶ (5.450x10 ⁶)	3.166x10 ⁶ (1.410x10 ⁶)	1.230x10 ⁸ (2.190x10 ¹⁰)	4.127x10 ⁶ (1.990x10 ⁶)	9.025x10 ⁶ (4.050x10 ⁶)	4.637x10 ⁶ (1.700x10 ⁶)	
S	2.273 (0.364)	2.244 (0.363)	2.248 (0.360)	2.461 (0.398)	2.296 (0.372)	2.407 (0.390)	2.437 (0.395)	
Log Likelihood	-593.496	-593.347	-591.869	-587.152	-591.462	-586.329	-585.039	
Likelihood Ratio χ^2	28.22	28.29	31.24	42.49	32.48***	43.50***	46.47***	
Likelihood Ratio Degrees of Freedom	8	9	8	9	10	9	11	

Note: *** p ≤ 0.001, ** p ≤ 0.010, * p ≤ 0.050; Number of Groups = 106; Number of Periods = 2; Dependent variable mean=21.924, std. dev.=17.464.

Online Appendix J: Regression Models of Change in Interest Group Influence – Limited Sample of Top 86 Organizations
Ordinary Least Squares with Robust Standard Errors

Independent Variable	(8)	(9)	(10)	(11)	(12)	(13)	(14)	Mean (std. dev.)
<i>Change in Number of Coalitions</i>	---	0.259 (0.179)	---	---	0.219 (0.196)	0.025 (0.167)	0.022 (0.177)	-3.012 (4.793)
<i>Change in Average Coalition Size</i>	---	---	0.079 (0.095)	---	0.052 (0.101)	---	0.005 (0.104)	2.860 (2.719)
<i>Change in Coalition Network Betweenness</i>	---	---	---	130.957*** (25.082)	---	129.553*** (25.555)	129.194*** (27.156)	5.710 (6.979)
<i>Change in Communication Network Betweenness</i>	95.591*** (24.279)	103.999*** (28.194)	94.364*** (24.673)	123.959*** (20.535)	101.883*** (28.375)	124.478*** (21.305)	124.219*** (21.752)	0.001 (0.015)
<i>Change in Registered Lobbyists Working on Medicare</i> (Average Number per Six-Month Period)	-0.116 (0.083)	-0.063 (0.090)	-0.128 (0.083)	0.095 (0.086)	-0.079 (0.091)	0.098 (0.091)	0.096 (0.098)	0.001 (0.014)
<i>Change in Political Action Committee</i> (Added PAC=1, No change = 0, Closed PAC=-1)	2.236 (1.300)	1.546 (1.458)	2.294 (1.313)	0.558 (1.065)	1.692 (1.472)	0.509 (1.124)	0.526 (1.140)	0.523 (2.572)
<i>Political Party Lean</i> (5-point scale, 1=Democratic, 5=Republican)	-0.227 (0.701)	-0.237 (0.694)	-0.288 (0.686)	-0.700 (0.617)	-0.276 (0.678)	-0.696 (0.619)	-0.698 (0.611)	0.058 (0.235)
<i>Endorser of the Medicare Modernization Act</i> (Yes=1, No = 0)	0.704 (1.001)	0.421 (1.059)	0.571 (1.034)	0.814 (0.931)	0.377 (1.079)	0.785 (1.012)	0.780 (1.056)	3.433 (0.943)
<i>Organizational Age in Years in 2003</i>	-0.011 (0.013)	-0.016 (0.013)	-0.011 (0.013)	-0.015* (0.013)	-0.015 (0.013)	-0.016* (0.014)	-0.016* (0.014)	0.488 (0.503)
<i>Citizens Advocacy Organization</i> (Yes=1, No = 0)	2.408 (1.431)	2.255 (1.355)	2.062 (1.537)	2.403 (0.998)	2.049 (1.500)	2.388 (1.011)	2.368 (1.116)	49.186 (42.604)
<i>Business Advocacy Organization</i> (Yes=1, No = 0)	0.176 (1.324)	-0.013 (1.344)	-0.347 (1.523)	0.815 (1.314)	-0.330 (1.535)	0.789 (1.334)	0.757 (1.535)	0.163 (0.371)
<i>Constant</i>	-2.629 (1.970)	-2.838 (1.922)	-2.476 (1.956)	-1.391 (1.651)	-2.704 (1.892)	-1.425 (1.624)	-1.416 (1.627)	0.535 (0.502)
F-test statistic	4.45***	3.57***	3.81***	8.85***	3.20**	7.91***	7.10	
F degrees of freedom	8, 77	9, 76	9, 76	9, 76	10, 75	10, 75	11, 74	
R ²	0.146	0.163	0.156	0.283	0.167	0.284	0.284	

Note: *** p ≤ 0.001, ** p ≤ 0.010, * p ≤ 0.050; Number of Groups = 115; Number of Periods = 1; Dependent variable mean = -3.012, std. dev = 4.793.