Stakeholder Participation in Policymaking: Evidence from Medicare Fee Schedule Revisions

Sanford C. Gordon
Wilf Family Department of Politics
New York University
19 West 4th Street
New York, NY 10011
sanford.gordon@nyu.edu

Steven D. Rashin
Radcliffe Institute
Harvard University
CGIS Knafel, K426
Cambridge, MA 02138
steven.rashin@nyu.edu

Abstract

To what extent do the material stakes of specific policies motivate political participation by affected interests? We address this question by examining physician participation in the annual process governing revisions to Medicare fee schedules. This setting permits us to identify the relevant universe of affected actors, and to construct a novel measure of the annual financial consequences of proposed policy changes that varies idiosyncratically at the individual level. Employing text analysis to identify who participates in the notice and comment process between proposed and final rules, we find that while few providers comment, the odds of participation vary dramatically as a function of a rule's impact, with anticipated losses motivating comments dramatically more than gains. This relationship persists in both individually tailored and mass comments, and is largely independent of the behavior of physician specialty societies. Evidence of the effect of these stakes on campaign contribution behavior is more modest.[1]

Short Title: Stakeholder Participation in Policymaking

Keywords: participation, Medicare, rulemaking, loss aversion, special interests

[1]Data and supporting materials necessary to reproduce empirical results are available in the JOP Dataverse (https://dataverse.harvard.edu/dataverse/jop). An online appendix with supplementary material is available at `https://sanfordgordon.com/wp-content/uploads/Gordon_Rashin_JOP_SI.pdf`.

Unequal rates of participation by private citizens and organized interests are a pervasive feature of numerous policymaking domains (Lehman, Verba, and Brady, 2012; Golden, 1998). According to one interpretation, this disparity reveals untoward or undemocratic influence of a wealthy and powerful elite (e.g., Schattschneider, 1960; APSA Task Force, 2004; Gilens, 2012). An alternative account points to asymmetries in the concentration of costs and benefits of different policies (Wilson, 1980). Per this latter understanding, unequal participation may simply reflect asymmetries in a policy's stakes, with only those actors facing unusually large losses or gains from prospective policy changes motivated to enter the political arena (particularly when doing so involves non-negligible costs).

Assessing the validity of the second account empirically faces a number of hurdles. First, standard measures of individual participation such as turnout and campaign contributions may reflect numerous concerns, complicating efforts to isolate the anticipated effects of a specific policy on an individual. Second, constructing a consistent measure of a policy's material impact is a daunting task, complicated by the fact that the underlying information is generally private. Moreover, even when they exist, such measures may be aggregated at the group or industry level, thus masking heterogeneity among members. Third, complications may arise in identifying the relevant population of individuals or organizations meaningfully affected by a policy to avoid selecting on the dependent variable. And finally, there may be a close correlation between the resources individuals or groups may bring to influence a policy change and their stake in the ultimate policy change itself. A failure to adequately account for the latter may lead to erroneous conclusions about the causal effect of the former.

To overcome these challenges, we examine participation by health care providers in the administrative process governing revisions to physician compensation under Medicare Part B. Starting in 2014, the Center for Medicare and Medicaid Services (CMS) began publishing data, disaggregated at the provider-service level, on Medicare utilization by physicians and suppliers. By combining these data with information on the providers themselves, we can identify the universe of individuals directly and materially affected by changes to the rules

governing their compensation. Moreover, linking proposed fee changes to the utilization data permits us to derive a measure of the material stakes of proposed changes to the fee schedule specific to each individual health care provider. We then employ natural language processing techniques to scrape the names of more than 3,000 health care providers from over 17,000 public comments on annual proposed revisions to the PFS made from 2012-2015.

We find that while only a very small fraction of physicians comment (perhaps unsurprisingly, given the time investment and the free-rider problem), the financial stakes of proposed fee revisions have a substantial impact on the odds of participation, an effect that is particularly pronounced for anticipated *losses*. This relationship persists both in original comments tailored by individual physicians and "mass" comments whose text is shared across multiple physicians; and whether or not the physician's specialty society participated. By contrast, the financial stakes of Medicare fee changes have at most a modest effect on campaign contribution behavior (c.f., Bonica, Rosenthal, and Rothman, 2014), consistent with the premise that numerous factors aside from those changes affect individuals' decisions to donate.

Our findings on the effects of prospective losses are consistent with the research on loss aversion from behavioral economics (Quattrone and Tversky, 1988; Tversky and Kahneman, 1991) and negativity bias more generally (Rozin and Royzman, 2001). By highlighting the extent to which differences in a policy's stakes translate into realized asymmetries in participation, they also contribute to the literature on regulatory politics and policymaking more generally (e.g., Stigler, 1975; Johnson and Kwak, 2010), and specifically the effect of participation in notice and comment rulemaking (Yackee and Yackee, 2006; Balla, 1998; Magat, Krupnick, and Harrington, 1986; Golden, 1998; West, 2004; Shapiro, 2008; Naughton et al., 2009). Our findings also complement a growing literature suggesting alternative mechanisms of influence consistent with empirical patterns traditionally deployed as evidence of regulatory "capture" (Carpenter, 2004, 2014; McCarty, 2017; Gordon and Hafer, 2014). Finally, our results speak to research on political behavior more broadly, and the extent to which perceived material or ideological stakes affect participation by individuals and groups in

the political process (e.g., Barber, Canes-Wrone, and Thrower, 2016; Campbell, 2002, 2005; Gordon, Hafer, and Landa, 2007; Hill and Huber, 2017; Verba, Schlozman, and Brady, 1995).

Background

With approximately $293 billion in total outlays in 2016, Medicare Part B covers medically necessary physician, outpatient, and preventive services; medical supplies; and some drugs. Since 1992, CMS has administered compensation under Part B in part via the "Physician Fee Schedule" (PFS). Under PFS, medical professionals are paid a piece rate for each of roughly 8,000 procedures ("codes") listed under the American Medical Association's Current Procedural Terminology.[2] For a given procedure, geographic area, and year, the fee is calculated from a formula involving three components: *Relative Value Unit* (RVU) scores for physician work, practice expenses, and malpractice insurance expenses; *Geographic Practice Cost Indices* (GPCIs) to capture local cost variation; and a monetary conversion factor (CF, around $36 per RVU).[3]

Fees vary dramatically across different services and geographically. Part B expenditures under PFS services were $69.9 billion in 2016, but this number dramatically understates the importance of these fees: as noted by others (Laugesen, 2016), private insurers cue off of the PFS when setting rates. Because increases in expected reimbursements are prohibited by law from exceeding $20 million per year (less than a one percent increase in total reimbursements per annum), an increase in relative compensation for one procedure usually entails a decrease for others. There were over 25,000 changes to RVU values from 2012 through 2016.

PFS is a federal rule subject to annual amendment. In general, an agency contemplating revising or issuing a new rule is required by Section 553 of the Administrative Procedure Act to publish a notice of proposed rulemaking (NPRM) in the *Federal Register*. Subsequently, the law requires the agency to "give interested persons an opportunity to participate in the

[2]Because of patient deductibles and co-insurance, the amount CMS actually reimburses medical providers may differ slightly from what the PFS specifies.

[3]Specifically, let w denote work, p practice, and m malpractice expenses. Then the fee for service s in geography g in year t is given by: $\varphi_t^{sg} = CF_t \times \sum_{k\in\{w,p,m\}} \left(RVU_{st}^k \times GPCI_{gt}^k\right)$.

rule making through submission of written data, views, or arguments." Agencies are required to "consider" materials presented, and to incorporate into the adopted rule a "concise general statement of their basis and purpose." Along these lines, concerned citizens, health care professionals, medical specialty societies, and hospital administrators submit comments on fee schedule revisions, and CMS frequently references these comments in the final rule (over 2,100 times in 2016). Comments range from highly detailed, technical critiques of proposed reimbursement levels to vituperative rants. In practice, CMS relies heavily on recommendations from the American Medical Association's Relative Value System Update Committee, particularly for physician work RVUs. Note that if most changes are negotiated under RUC review, this will tend to exert a downward bias on our findings below.

Data and Approach

Our measure of participation is whether a Medicare-billing physician commented on a proposed rule change. We also distinguish between "tailored" comments written by individual physicians and "mass" comments with substantial ($> 95\%$) overlap submitted by multiple physicians (see Appendix for details). To obtain a measure of physician financial stakes, we exploit the release of Medicare Provider Utilization and Payment Data, which contains information on every physician and other health care professional submitting a Medicare claim from 2012-2015. Not only do these data permit us to fully define the universe of directly affected parties, they also, when joined with proposed and enacted fee schedules, allow us to construct a novel measure, labeled ξ_{it}, of provider i's financial stake in year t: the amount of money a physician stands to gain or lose from proposed annual changes to the PFS, assuming they are not so large as to induce significant substitution and income effects.[4]

Specifically, for each procedure conducted by a physician, we calculate the difference in proposed and current fees, and multiply this difference by the number of times the physician

[4]Most RVU changes are small. More importantly, if physicians are revenue maximizers with rational expectations, substitution effects will blunt the financial impact of any rule changes, biasing against detecting a relationship between participation and observed stakes.

performed the procedure that year. We then sum these products over all procedures conducted by the physician.[5] We anticipate that the higher the absolute value of ξ_{it}, the more likely a physician is to participate in notice and comment. Because there is no reason to anticipate that anticipated gains, $\xi_{it}^{+} \equiv \mathbb{I}(\xi_{it} > 0)\xi_{it}$, and losses, $\xi_{it}^{-} \equiv \mathbb{I}(\xi_{it} < 0)\xi_{it}$, will have symmetric effects, we distinguish between them in the estimation.

To compare effects of immediate financial stakes with physician socioeconomic status, we include Medscape.com's measure of *average physician salary* by specialty-year, adjusted geographically to account for geographic differences in physician pay. To control for the physician's overall financial exposure to Medicare generally, we control for the logged *total maximum allowable expenses* from the Medicare utilization data as well as a Herfindahl Hirschman Index of how concentrated those expenses are across different procedures for a physician in a given year. We link providers to their political contribution behavior during the 2012 and 2014 cycles using the physician subset of Bonica's DIME database (Bonica, Rosenthal, and Rothman, 2014). We assess the effect of partisan leaning on commenting by including measures of whether a physician made contributions more than two-thirds of which went to Republicans, less than one-third, and between one and two thirds. To assess whether the financial stakes of prospective fee schedule change affect other forms of participation aside from regulatory commenting, we consider whether the anticipated financial impact of rulemaking affected campaign contribution behavior in 2012 or 2014. This is to be sure, a weak test of the stakes hypothesis, as physicians may have numerous reasons to contribute.

Identifying the causal effect of financial stakes on participation requires that our measures of those stakes be assigned *as if random* conditional on covariates. We assess the robustness of this assumption using regressions of the form

$$\Pr(comment_{it}) = F\left(\beta_1 \ln \xi_{it}^{-} + \beta_2 \ln \xi_{it}^{+} + \beta_3 \mathbb{I}(\xi_{it} > 0) + \gamma X_{it} + \tau_t + G_{it}\right),$$

[5] Suppressing geographic adjustments for notational clarity, let φ_t^s denote the fee for service s in calendar year t, and $\hat{\varphi}_{t+1}^s$ the corresponding *proposed* fee for the following year. Let n_{it}^s denote the number of services of type s conducted by physician i at time t. Then the total (static) stakes to physician i in year t (for the schedule proposed to go into effect in $t+1$) are calculated as $\xi_{it} \equiv \sum_s (\hat{\varphi}_{t+1}^s - \varphi_t^s) n_{it}^s$.

where X is the vector of controls described above, τ_t denotes a year-specific intercept, and G_{it} is a placeholder for a vector of fixed effects that varies across specifications. In some specifications, we employ fixed effects at the specialty×year level, an approach that controls for any political activity conducted by a physician's specialty society, an issue we return to below. In the most restrictive models, we employ a conditional fixed effects logistic regression model, with *physician*-level effects. This limits attention to physicians who ever comment, but implicitly controls for time-invariant features of physician socioeconomic status.

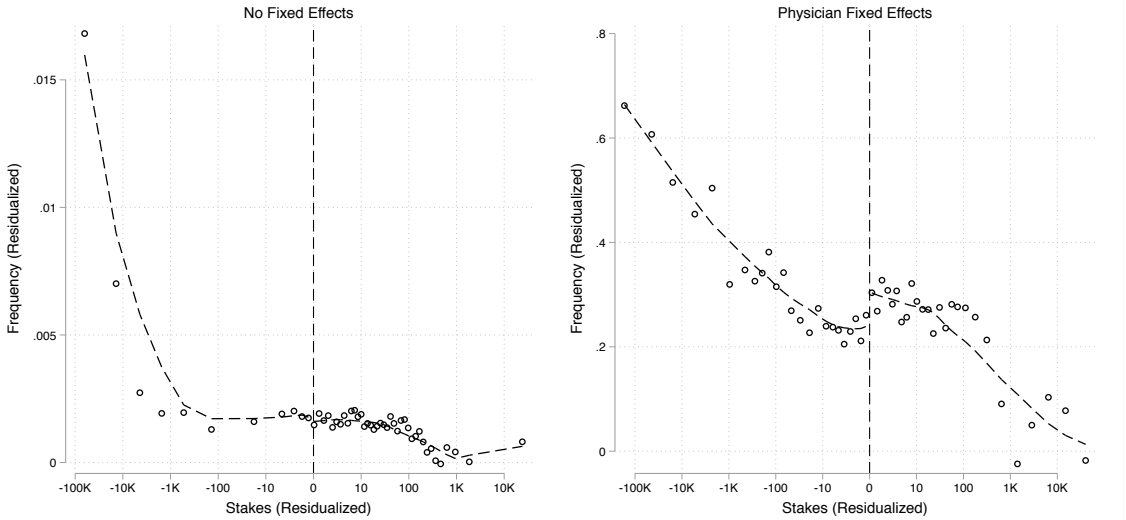
Results

We first establish a benchmark concerning the overall likelihood of commenting. That likelihood is extremely small: aggregated across the four years in our sample, we observe 3,432 instances of a medical practitioner commenting on a fee revision, or about 858 per year. By comparison, nearly half a million practitioners per year billed for reimbursement. Thus, on average, less than 2/10 of one percent of all affected practitioners commented per year – a number that approximates the fraction of Americans who donate more than $200 to a political campaign.[6] Within the set of doctors ever commenting in the four year window, roughly 95 percent did so only once. These aggregate numbers mask considerable variation over time and across medical specialties: for example, almost 2,000 letters in 2014, compared to 375 in the prior year. Also noteworthy is marked variation across specialties: for example, during the period under study, diagnostic radiologists submitted 869 comments and gastroenterologists 639. Optometrists and hand surgeons, by contrast, submitted none.

Figure 1 displays a binned scatterplots capturing the relationship between a physician's financial stakes of a proposed rule for the following year (note log-scale) and likelihood of commenting. Each token depicts the frequency of comments in an equally sized slice of observations, residualized using the covariates above plus year indicators. The right panel conditions on physician-specific fixed effects as well, and restricts attention to physicians who *ever* commented. Three patterns emerge from the figure. First, as noted above, the overall incidence of comments is exceedingly low. Second, there is a dramatic relationship between

[6] `www.opensecrets.org/overview/donordemographics.php`, last accessed 8/15/2018.

Figure 1: Conditional Relationship between Anticipated Fee Changes and Commenting: Binned Scatterplots



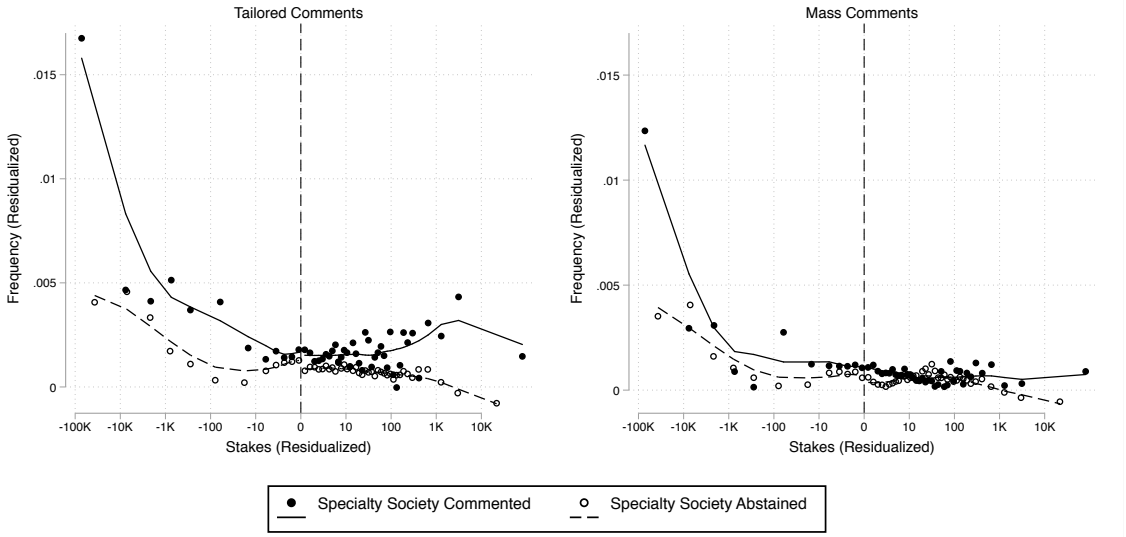
Tokens depict the (residualized) mean rate of commenting for 50 equally-sized bins of data. Lowess curves for anticipated losses and gains plotted separately.

the anticipated financial *losses* associated with a fee schedule change and the likelihood of participation in the process. In the no fixed-effect specification, the relationship is especially strong for very large losses (at or greater than $10,000). Restricting attention to the fixed-effect specification the association is smoother, and sustained over the entire range of losses. Finally, we observe a flat or negative relationship between anticipated financial *gains* and commenting. This suggests that commenters expend effort to avert losses but not to protect gains, and, if anything, are dissuaded from corresponding when they stand to benefit.

Regression results in Table A3 in the Appendix support the evidence presented above. In all specifications, negative financial stakes are strongly associated with commenting while positive stakes are not (see Figure A1). Depending on the specification, an increase in anticipated *losses* from zero to the median loss (about $320) is associated with a three to eight-fold increase in the odds of commenting. By contrast, the regression results suggest no significant relationship between anticipated *gains* and the odds of commenting. In the Appendix we show that our results are robust to alternative specifications.

One possibility that emerges from the foregoing is that individual commenting may be

Figure 2: Tailored vs. Mass Comments by Physicians Given Specialty Society Participation



See caption of Figure 1 for details. Residualization includes specialty-specific fixed effects.

affected – either negatively or positively – by the participation of specialty societies (the physician equivalent of trade associations) in notice and comment. On the one hand, physicians may feel that societies adequately represent their interests, depressing individual participation. On the other, societies may drum up participation by members, especially in the form of mass comment campaigns. While the robustness of our findings to the inclusion of specialty×year fixed effects implicitly controls for such activity, it is still useful to consider whether society participation complements or substitutes for member participation.

Accordingly, Figure 2 documents the conditional relationship of material stakes and participation, disaggregating tailored and mass comments and conditioning on whether the physician's specialty society commented (also see Appendix Table A11). Perhaps surprisingly, comments individually tailored by physicians are more common than mass comments. Second, anticipated losses drive participation irrespective of correspondence type and specialty society participation. Third, we observe a positive relationship between society commenting and overall rates of individual comments. Although we are hesitant to assign a causal interpretation to this association, we note that it is more consistent with specialty society political action complementing or catalyzing, rather than depressing, member activity.

To see whether our main results carry over to other forms of participation, we examined campaign contributions. Appendix Table A4 replicates our analysis with linear models using logged total campaign contributions (plus one) as the outcome. The regressions suggest no effect of anticipated gains, and a significant (though small) effect of anticipated losses in one specification. Table A5 examines whether anticipated losses (gains) motivate reallocation of contributions toward (away from) Republican candidates (our data come from the Obama era). Although the signs and magnitudes of coefficients are not stable across specifications, we do observe a substantively and statistically significant effect of anticipated losses in the specification with physician-specific effects: specifically, a shift from no loss to the median loss corresponds to an approximately 8.3 percentage point increase in the fraction of expenditures going to Republicans. Taken together, these results suggest that changes in financial stakes induced by proposed fee revisions may have a small effect on contribution behavior.

Discussion

Our derivation of a precise measure of physicians' material stakes permitted us to conduct a fine-grained analysis of the extent to which those stakes drive physician participation in a way distinct from the material resources available to them. Our principal finding is that while overall physician participation in the process is quite low, it is nonetheless highly responsive to changes in material stakes. Consistent with predictions derived from behavioral economics, participation is far more sensitive to anticipated *losses* than *gains* from policy changes. We also find that comments by individuals are positively associated with commenting by their respective professional associations, suggesting a complementary relationship between the political activities of groups and their members.

By demonstrating that anticipated losses drive participation, our results provide an important caveat for how to interpret evidence of apparent bias in the regulatory process. Specifically, disproportionate participation of business, or even concessions by regulators to firms, may reflect efforts to mitigate concentrated costs. That being said, one limitation of our study is that the specific context of Medicare fee revisions, while permitting the gran-

ular approach taken here, may not be representative of the regulatory politics generally. Medicare is unusual insofar as the affected "business" interests are individual citizens rather than corporations. Further research is necessary to examine the extent to which our results generalize to settings in which the affected interests are corporate rather than individuals.

Acknowledgements We gratefully acknowledge Abraham Aldama-Navarrete, Anthony Bertelli, Alex Bolton, Seth Hill, Dimitri Landa, Hye Young You, and participants in the American Politics and Political Methodology Seminar at Stanford University for helpful suggestions and comments.

References

APSA Task Force, on Inequality and American Democracy. 2004. American Democracy in an Age of Rising Inequality. Report , American Political Science Association.

Balla, Steven J. 1998. "Administrative Procedures and Political Control of the Bureaucracy." *American Political Science Review* 92 (3): 663–673.

Barber, Michael J., Brandice Canes-Wrone, and Sharece Thrower. 2016. "Ideologically Sophisticated Donors: Which Candidates Do Individual Contributors Finance?" *American Journal of Political Science* 61 (2): 271–288.

Bonica, Adam, Howard Rosenthal, and David J. Rothman. 2014. "The political polarization of physicians in the united states: An analysis of campaign contributions to federal elections, 1991 through 2012." *JAMA Internal Medicine* 174 (8): 1308–1317.

Campbell, Andrea Louise. 2002. "Self-Interest, Social Security, and the Distinctive Participation Patterns of Senior Citizens." *American Political Science Review* 96 (3): 565–574.

Campbell, Andrea Louise. 2005. *How Policies Make Citizens: Senior Political Activism and the American Welfare State*. Princeton, NJ: Princeton University Press.

Carpenter, Daniel. 2004. "Protection without Capture: Product Approval by a Politically Responsive, Learning Regulator." *American Political Science Review* 98 (4): 613–631.

Carpenter, Daniel P. 2014. "Detecting and Measuring Capture." In *Preventing Regulatory Capture: Special Interest Influence and How to Limit It*, ed. Daniel P. Carpenter, and David A. Moss. New York, NY: Cambridge University Press pp. 57–68.

Gilens, Martin. 2012. *Affluence and Influence: Economic Inequality and Political Power in America*. Princeton, NJ: Princeton University Press.

Golden, Marissa. 1998. "Interest Groups in the Rule-Making Process." *Journal of Public Administration Research and Theory* 8 (2): 245–270.

Gordon, Sanford C., and Catherine Hafer. 2014. "Conditional Forbearance as an Alternative to Capture: Evidence from Coal Mine Safety Regulation." In *Preventing Regulatory Capture: Special Interest Influence and How to Limit It*, ed. Daniel P. Carpenter, and David A. Moss. New York, NY: Cambridge University Press pp. 208–238.

Gordon, Sanford C., Catherine Hafer, and Dimitri Landa. 2007. "Consumption or Investment? On Motivations for Political Giving." *The Journal of Politics* 69 (4): 1057–1072.

Hill, Seth J., and Gregory A. Huber. 2017. "Representativeness and Motivations of the Contemporary Donorate." *Political Behavior* 39 (1): 3–29.

Johnson, Simon, and James Kwak. 2010. *13 Bankers: The Wall Street Takeover and the Next Financial Meltdown*. New York, NY: Vintage Books.

Laugesen, Miriam J. 2016. *Fixing Medical Prices*. Cambridge, MA: Harvard University.

Lehman, Kay, Sidney Verba, and Henry E. Brady. 2012. *The Unheavenly Chorus*. Princeton, NJ: Princeton University Press.

Magat, Wesley, Alan J Krupnick, and Winston Harrington. 1986. *Rules in the Making: A Statistical Analysis of Regulatory Agency Behavior*. Washington, DC: RFF Press.

McCarty, Nolan. 2017. "The Regulation and Self-Regulation of a Complex Industry." *The Journal of Politics* 79 (4): 1220–1236.

Naughton, Keith, Celeste Schmid, Susan Webb Yackee, and Xueyong Zhan. 2009. "Understanding commenter influence during agency rule development." *Journal of Policy Analysis and Management* 28 (2): 258–277.

Quattrone, George A., and Amos Tversky. 1988. "Contrasting Rational and Psychological Analyses of Political Choice." *The American Political Science Review* 82 (3): 719–736.

Rozin, Paul, and Edward B. Royzman. 2001. "Negativity Bias, Negativity Dominance, and Contagion." *Personality and Social Psychology Review* 5 (4): 296–320.

Schattschneider, Elmer. 1960. *The Semisovereign People: A Realist's View of Democracy in America*. New York, NY: Cengage Learning.

Shapiro, Stuart. 2008. "Does the amount of participation matter? Public comments, agency responses and the time to finalize a regulation." *Policy Sciences* 41 (1): 33–49.

Stigler, George J. 1975. *The Citizen and the State: Essays on Regulation*. Chicago, IL: University of Chicago Press.

Tversky, Amos, and Daniel Kahneman. 1991. "Loss Aversion in Riskless Choice: A Reference-Dependent Model." *Quarterly Journal of Economics* 106 (4): 1039–1061.

Verba, Sidney, Kay Lehman Schlozman, and Henry E. Brady. 1995. *Voice and Equality: Civic Voluntarism in American Politics*. Cambridge, MA: Harvard University Press.

West, William F. 2004. "Formal Procedures, Informal Processes, Accountability, and Responsiveness in Bureaucratic Policy Making: An Institutional Policy Analysis." *Public Administration Review* 64 (1): 66–80.

Wilson, James Q. 1980. *The Politics of Regulation*. New York, NY: Basic Books.

Yackee, Jason Webb, and Susan Webb Yackee. 2006. "A Bias Towards Business? Assessing Interest Group Influence on the U.S. Bureaucracy." *Journal of Politics* 68 (1): 128–139.