A TEST OF THE POLITICAL CONTROL OF BUREAUCRACIES UNDER ASYMMETRIC INFORMATION

Andrew B. Whitford*
Associate Professor
Department of Public Administration and Policy
School of Public & International Affairs
The University of Georgia
204 Baldwin Hall
Athens, GA 30602-1615
Voice: 706.542.2898
Fax: 706.583.0610
Email: aw@uga.edu

*I thank Tony Bertelli for his insightful comments on this paper.
A TEST OF THE POLITICAL CONTROL OF BUREAUCRACIES UNDER ASYMMETRIC INFORMATION

Abstract: How does the informational role of interest groups interact with institutions in the political control of the bureaucracy? In 1992, Banks and Weingast argued that bureaucrats hold an informational advantage vis-à-vis political principals concerning variables with direct policy relevance, and that an agency can exploit this information if it chooses to do so because politicians and bureaucrats interact in a world of asymmetric information. They show that when the politician’s cost of auditing the agency is high, the agency can extract more, and politicians anticipate this by adapting to it in their design of agencies. Auditing cost depends on the technology available for monitoring, and the ability of an interest group to monitor the agency’s choices and performance and relay that information to politicians. The informational advantage is reduced – the agency is more likely to “tell the truth” – when a low-cost monitoring technology is available, and when the group is cohesive enough to participate in monitoring.

I test this hypothesis using data on bureaucratic statements on the importance of a series of public policy problems using a cross-section of state-level environmental agencies. I show that importance statements are aligned with objective circumstances when both conditions are satisfied: when the technology is present and as the interest group becomes concentrated. The bureaucracy’s informational advantage collapses under these conditions, and the statements conform to those in a “truth-telling” equilibrium.
In recent decades, scholars have sought to better understand how bureaucrats make informational statements that become important components of the agenda-setting stage of public policy (Gormley, Hoadley, and Williams 1983). At the same time, numerous studies have argued that interest groups play an important role in providing information about optimal delegation (e.g., Austin-Smith 1997; Banks and Weingast 1992; Bennedsen and Feldman 2002; Krehbiel 1991). The accurate revelation of information does not guarantee that the agency will readily convert that information into responsive policy formation or implementation. Yet, accurate statements bind an organization’s hands so that other actors (politicians or groups) can pressure the agency to act. We have studied bureaucratic responsiveness in terms of both outputs (e.g., Wood and Waterman 1994) and policy outcomes (e.g., Ringquist 1995), but our understanding of the responsiveness of bureaucrats depends on our understanding of external actors’ preferences and strategies; those preferences and strategies depend in part on the information and beliefs the actors hold; and, that information and those beliefs may depend – at least in part – on the agenda-setting power of the bureaucrats themselves.

In 1992, Banks and Weingast formalized our concern about this agenda-setting power on the part of bureaucrats. They argued that bureaucrats hold an informational advantage vis-à-vis political principals concerning variables with direct policy relevance, and that an agency can exploit this information if it chooses to do so because politicians and bureaucrats interact in a world of asymmetric information. The information a bureaucrat holds is based on expertise, not formal authority (Altfeld and Miller 1984) so politicians seek defenses against expertise-based manipulation (Bendor, Taylor, and Van Gaalen 1987). The Banks-Weingast model shows that when the politician’s cost of auditing the agency is high, the agency can extract more, and politicians anticipate this by adapting to it in their design of agencies. Auditing cost depends on
the technology available for monitoring, and the ability of an interest group to monitor the agency’s choices and performance and relay that information to politicians. The informational advantage is reduced – the agency is more likely to “tell the truth” – when a low-cost monitoring technology is available, and when the group is cohesive enough to participate in monitoring.

*It is remarkable is that no known direct test of the Banks-Weingast hypothesis exists to this point* – especially since it is a primary point of reference for understanding how groups and monitoring reduce asymmetric information in politician-bureaucrat interactions. Even so, this formal analysis is a core building block upon which more elaborate models of bureaucratic control and design have been built (e.g., Epstein and O’Halloran 1994, 1995; de Figueiredo, Spiller, and Urbiztondo 1999; Gailmard 2002; Ting 2002; Volden 2002).

In this paper, I test this hypothesis using data on bureaucratic statements on the importance of a series of public policy problems. I test for the degree of alignment between the statements and an observable and verifiable indicator of each problem’s importance. As a direct test of the Banks-Weingast hypothesis, I test for the effect of the combination of (1) a low-cost monitoring technology and (2) an interest group on how the importance statement and the observable indicator align. My test environment is a cross-section of state-level environmental agencies, each responding to a battery of importance/ranking) questions on hazardous waste policy. In this case, both monitoring cost attributes vary – both the existence of a low-cost monitoring technology, and the presence of an interest group. I show that importance statements are aligned with objective circumstances when both conditions are satisfied: when the technology is present and as the interest group becomes concentrated. The bureaucracy’s informational advantage collapses under these conditions, and the statements conform to those in a “truth-telling” equilibrium.
Banks and Weingast argue that this should happen when these two factors are present. However, they also argue that because politicians anticipate this control problem in the presence of asymmetric information, agencies where low-cost monitoring technologies are not available or where interest groups are too diffuse will not be created. This selection effect should control the population of observable agencies and limit our ability to test the effect of monitoring costs on bureaucrats operating under asymmetric information. Instead of observing whether an agency faces termination when the interested group becomes more diffuse (Banks and Weingast 1992, 522), the data I employ here reveal both sides of the prediction: when monitoring costs are low, statements conform to objective conditions; when costs are high, statements do not conform to those conditions.

This study proceeds as follows. The first section briefly reviews the logic of the Banks-Weingast prediction about political control of the bureaucracy under asymmetric information. Second, I specify a model in the context of state implementation of hazardous waste policy. The third section presents a statistical model of the importance statements bureaucrats made regarding a list of common public policy problems. In accord with the Banks-Weingast prediction, I find that those statements are aligned with objective conditions when both a low-cost monitoring technology (a right-to-know rule) is in place and a concentrated interest group (environmental constituency) is present. Last, I discuss the implications of this theory, case, test, and findings for our understanding of information revelation and institutional design.

POLITICAL CONTROL AND ASYMMETRIC INFORMATION

Banks and Weingast (1992) provide a formal rationale for the political design of agencies
that uses interest groups to provide information to political actors about regulatory performance. They argue that because bureaucrats have policy expertise, that agencies can exploit this asymmetric position with respect to their political overseers. They then show that a major consequence of this is that politicians anticipate this potential exploitation in how the design agencies, and that that anticipation relies strongly on service by interest groups. If politicians can audit the agency, they may be able to reduce how the agency exploits the information asymmetry for its own purposes. But if auditing is costly, neither politicians nor the agency can extract all of the political gains: some resides with the agency, and some resides with politicians.

Specifically, the model is based on Banks (1989), which posits a setting defined by “sequential rationality” and provides the basis for understanding the equilibrium behavior of an agency and a politician in a budget game, given the cost of auditing the agency, its value to the politician, a true cost of the agency’s services, and the politician’s prior beliefs about that cost. The model’s referent is to budget requests, which is in effect a result of how previous research addressed the objective function of agencies (e.g., Niskanen 1971; Bendor, Taylor, and Van Gaalen 1987). However, the object about which there is asymmetric information is conceived of more broadly in the Banks-Weingast model. Essentially, the cost of auditing induces the agency to either accurately or inaccurately represent the truth: the higher the cost of auditing, the more the agency can extract (exploit the information asymmetry). An agency has both a value and an auditing cost. By the agency’s value, Banks and Weingast mean “the benefits the agency

---

1 Others also have studied how agencies act under conditions marked by asymmetric information, or at least how they act once we adopt procedures to reduce the effect of that asymmetry (e.g., Bendor, Taylor, Van Gaalen 1987; Calvert, McCubbins, and Weingast 1989; Hammond and Knott 1996; Kiewiet and McCubbins 1991; McCubbins, Noll, and Weingast 1990).

2 See Banks (1989) for the differences between a model based on sequential rationality and one based in the principal-agency tradition.
generates for the relevant interest group constituency as well as the ability of the group to translate those benefits into the electoral awards the politician covets” (1992, 519). In comparison, auditing costs are “a function both of the technological considerations or gross costs of monitoring the agency as well as the ability of the relevant interest group to monitor the choices and performance of the agency and convey politically relevant information to politicians” (1992, 519).

The Banks-Weingast model shows that politicians prefer agencies with lower auditing costs (given fixed value). This shifts attention to the use of constituencies for monitoring and reducing that asymmetry (the use of “fire alarm” monitoring in McCubbins and Schwartz (1984) and “constituency triggers” in Weingast (1984)). Because groups can monitor the agency’s performance more effectively than can the politician, using them for this allows the politician to accrue a larger proportion of the rewards. Whether this strategy is effective depends on the agency itself, which can be characterized by its value, the difficulty of monitoring the agency, and the degree of diffuseness (or alternatively, cohesion) in the interest group. In equilibrium, the agency’s ability to misuse the information asymmetry (the likelihood the agency will tell the truth – that reality and statements will correspond) depends on how the monitoring technology and the interest group interact: one might be able to substitute for a coarse (higher cost) technology by having a more concentrated (cohesive) group, but a diffuse group’s ability to monitor depends on the existence of a low-cost technology.

The purpose of this study is to test this hypothesis: that the agency’s advantage due to the information asymmetry collapses when a low-cost monitoring technology is present and as the constituency becomes more concentrated. This proposition is the core of the Banks-Weingast model, and provides the foundation for additional theoretical development that follows in this
tradition. It also is a core theoretical statement of the role of “fire alarm” oversight and constituency triggers in a world of asymmetric information.

Banks and Weingast move beyond this theoretical argument to argue that a politician who anticipates that for a given agency neither a low-cost monitoring technology is available nor a concentrated interest group present, will fail to create such agencies – or that such agencies will not persist. Even if an agency is created in that case, the politician would have incentives to terminate the agency or to search for a technology for use by a diffuse constituency. While the politician’s optimal selection of the agency guarantees high auditing, and low auditing means that the agency is not selected, this proposition depends in part on the former: that the technology and concentrated group are together sufficient to reduce monitoring costs. In the next section, I offer a research design that allows for testing this core proposition of the Banks-Weingast model.

MODEL SPECIFICATION

In this section, I offer a research design and model specification for testing the Banks-Weingast hypothesis. Because the core of the hypothesis relies on the possible exploitation of the state of asymmetric information by the agency, I center my investigation on a setting where agency decision-makers make statements about how they rank the importance of a particular public policy problem, and where objective data are available that represent that importance. Moreover, the setting must have variation in both the monitoring technology and the concentration of interested groups. For these reasons, I test the Banks-Weingast hypothesis in the context of hazardous waste policy in the United States. On one hand, hazardous waste is a public policy problem that has both attributes necessary for identifying the departure of bureaucratic statements in light of an information asymmetry; specifically, bureaucrats can rank the importance of types of sites, and objective data are available on the types of sites. On the
other hand, hazardous waste policy is a contentious area in the American political economy, one marked by substantial investment in expanding the ability of interest groups to monitor and oversee bureaucratic action. Last, interest groups are present and are substantial operators in providing benefits to politicians through their active oversight of the policies intended to mitigate this public problem, although the role of that oversight has varied substantially over time.

The core of my approach is to identify a point in time when all of these components vary: (1) when bureaucrats vary in their statements about this problem, (2) when objective conditions that could underpin these statements vary, (3) when the presence of the monitoring mechanism varies, and (4) when the concentration in the interest group varies. To fully test the Banks-Weingast hypothesis, all of these conditions must be able to vary freely, for by theory the conditional effect of real information on bureaucratic statements depends on both the presence of the monitoring mechanism and the concentration of the interest group. Observation of only those cases where the monitoring mechanism is present (or only those where it is not present) is insufficient – neither is observation of only those cases where the concentration of the interest group is high. Moreover, the external referent – the truth behind truth-telling – is necessary, too.

In this application, I also obtain an additional benefit: the statements that I use can be thought of as cheap talk. The bureaucrat’s statements are elicited for purposes other than for oversight by politicians or interest groups (although it is remotely possible that they could be used for that purpose), rather they were elicited as part of a larger academic data collection project; this represents a particularly hard test for the effectiveness of the monitoring technology in combination with a concentrated interest group for reducing the information asymmetry between bureaucrat and politician.

To satisfy these requirements, my application is drawn from the state implementation of
hazardous waste remediation programs. The primary laws governing the remediation of hazardous waste sites are federal, but the state role in this public policy arena is substantial and growing.  

3 The statements I use as my dependent variable are the importance ranking that state environmental authorities assigned a certain type of waste site (obtained from responses to a survey sent to the appropriate regulatory authority – usually the appointed head administrator of an environmental protection agency in each of the fifty states) (Day, et al 1991). The survey asked the regulatory official to rank types of waste sites by their importance as determined by the frequency of their occurrence, and to use a precise basis for the ranking (or if such a basis was not available, their professional judgment). Respondents were asked rank the types on their relative importance: High (H), Medium, (M), Low (L), and Negligible (N) (Day, et al 1991).  

4 The dependent variable is a zero through three ranking (corresponding to Negligible, Low, Medium, and High) of the importance of a waste-site type within a state.  

5 In the data considered

---

3 Federal laws governing this area include the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund) and the Superfund Amendments and Reauthorization Act (SARA). Substantial remedial action is still usually necessary for sites that do obtain a hazard ranking high enough to be placed on the National Priorities List (NPL, the list of sites warranting expenditure of federal funds). Studies project the total number of sites to be at least 32,000 (Day, et al 1991) and possibly as many as 425,000 (U.S. GAO 1987). The federal program will not address most of these sites; the remainder falls within the purview of the states. At the time of this survey, only four percent of the 31,000 sites identified in CERCLIS, the Environmental Protection Agency's inventory system, had reached the NPL (Hird 1993). The state programs' responsibilities were large. Yet, in many cases, sites reaching the NPL are targeted for coordinated cleanup efforts by federal and state authorities, so at a minimum, states faced the dual problem of pursuing remediation strategies at sites not on the NPL, and coordinating activities at sites on the NPL.  

4 The data are constructed of multiple observations per state official. The waste site types included: asbestos; chemical manufacturing; dioxin; drum recycling; electrical contamination (PCBs); electroplating operations; hazardous waste transport, storage, and disposal facilities; landfills; leaking containers; metal working; mining; other manufacturing; pesticides and fertilizers; petroleum exploration and refining; radiological tailings; surface impoundments; TNT processing; town gas sites; underground storage tanks; water wellfields; wood preserving; and, other site types. Petroleum exploration and refining is explicitly excluded from the federal CERCLA program, but could be included in any given state's program (Day, et al. 1991).  

5 Officials of thirty states responded to the survey, with twenty-six responding to the ranking question. Those who responded to this question appear representative of the whole (43.4 percent of the total national value added in manufacturing in 1991, and 38.0 percent of the total Toxic Release Inventory releases in 1987). States responding to the survey were Alabama, Arizona, Colorado, Connecticut, Delaware, Hawaii, Idaho, Indiana, Kansas, Kentucky, Maine, Maryland, Minnesota, Missouri, Montana, Nebraska, Nevada, New Jersey, New York, North Carolina, North Dakota, Oklahoma, Oregon, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, and West Virginia. Of these, states not responding to the ranking question were Connecticut, Idaho, Maryland, and Nevada.
here, the incidence of the ordinal categories is: Negligible (15 percent), Low (23 percent), Medium, 33 percent), and High (29 percent).

The distinct advantages of this test environment are that each official responded to a battery of questions asking for rankings of the importance of a specific public policy problem, that each ranking was requested to be made on the basis of available data, and that the rankings were not required to be precise, but instead a simple ordering of the importance on a underlying linear scale. An additional advantage in this design is that objective data are available for these importance statements. In an alternate design, such as the use of budget requests as a dependent variable, the necessary information for assessing the effect of asymmetric information is the true cost of supplying the agency’s benefits, a quantity that is unobservable. As such, this test environment provides an opportunity to combine bureaucratic statements with objective data. Is this environment consistent with that purported by Banks and Weingast? The response to survey is essentially cheap talk, so by testing for the way in which the alignment is caused, I directly assess the roles of monitoring technology and the concentration of the interest community.

Were the orderings aligned with objective data? To assess this, objective data on the number of sites in a state at this point in time were collected from the Agency for Toxic Substances and Disease Registry (ATSDR) HazDat database, which provides site characteristic information for all known hazardous waste sites in the U.S. For the states and waste site types considered here, the highest measure is for landfills in New York; the states with no sites in the ATSDR database for a given site type include: Hawaii, North Dakota, and Wyoming. Why might bureaucrats systematically depart from the objective data for these rankings? Perhaps the most compelling reason is that introducing a downward bias in the ranking (rankings not as high as
they should be) might reduce pressure for what can be extremely costly remediation efforts. By offering an importance statement, bureaucrats can create pressure for delivering benefits (value). The delivery of such value entails costly effort on the part of the agency, including opportunity costs from not addressing other, competing problems and the obvious effect on slack. Even so, if there are no such incentives to introduce bias, then the alignment of the bureaucrat’s statements and the data should be straightforward. If there is an incentive, then this is consistent with the bureaucrat’s exploitation of the state of asymmetric information to extract value from politicians and interest constituencies for their own purposes. In that case, the Banks-Weingast hypothesis applies: the ability to monitor the agency through a low-cost monitoring technology staffed by a concentrated interest group should align statements and objective data.

The third piece of the test is variation in the existence of a low-cost monitoring technology – here found in the incidence of community “right-to-know” protections regarding health hazards. Following EPCRA, some states took additional administrative and legislative actions to implement EPCRA right-to-know to bring their state policies into line with the federal law. The advantage of using data from 1991 is that it was the fifth year after the passage of EPCRA, a point when significant concern was expressed for the status of the program and its

---

6 While the survey was intended to uncover rankings based on actual frequencies of site types, the responses did not indicate that actual frequencies alone were used to support the rankings (Day, et al 1991).

7 The Environmental Protection and Community Right-To-Know Act (EPCRA), a component of the 1986 Superfund Amendments and Reauthorization Act, requires federal, state and local governments, tribes, and industries to establish emergency planning and community right-to-know reporting programs. A core component is the Toxics Release Inventory (TRI). Numerous studies have documented the effect of information provision requirements on emissions of pollution across a wide spectrum of regulated entities (e.g., Hamilton 1995; Konar and Cohen 1997; Khanna, Quimio, and Bojilova 1998; Maxwell, Lyon, and Hackett 2000). The disclosure of such information supplements more direct “command and control” methods of regulation, and extends to other types of disclosure statements required in securities regulation and consumer product safety (e.g, Aboody and Kasznik 2000; Diamond 1985; Gray 1984). Generally, this is known as “informational” or “reputational” regulation (Tietenberg 1998; Magat and Viscusi 1992; Kleindorfer & Orts 1998; Sage 1999; Sunstein 1999; Florini 1998).
state-level implementation (e.g., Hall and Kerr 1991). My measure is whether within five years from the passage of EPCRA a state had added right-to-know provisions to promote access. The advantage here is that in these data not every state has adopted the low-cost monitoring technology of right-to-know provisions: in fact, of the twenty-six states in the sample, ten had. This too contributes to the application being a particularly difficult test case for the Banks-Weingast hypothesis.

The last primary component of the hypothesis is the concentration of the interest community for whom the monitoring technology is supposed to be an effective inducement for supplying services to the politician. A number of studies have documented the role of organized interests in bureaucratic processes in hazardous waste regulation (e.g., Lester, et al. 1983; Williams and Matheny 1984), but none to date have addressed the interaction between interest communities and the role of the monitoring technology. My measure of environmental interest group incidence in each state is the number of group members in the Sierra Club, Greenpeace and National Wildlife Federation (NWF) in the state, measured per 1,000 residents. For Banks and Weingast (1992), the efficacy of the interest group is found in its relative concentration or diffuseness. Monitoring costs are directly related to the interest group, and in the case of hazardous waste policy, this measure provides a useful estimate. Sierra Club is one of the oldest, and most respected, of the environmental groups; it also has substantial political power because it engages in direct political lobbying and action. Greenpeace is a nontraditional group that consistently involves itself in public actions meant to monitor and sway agencies and

---

9 This is based on an instrument implemented by the Center for Policy Analysis (Hall and Kerr 1991, 151).
10 Thirty-eight percent of the observations were marked by right-to-know (not every state responded to every ranking question).
11 Original data obtained from Names in the News, and found in Hall and Kerr (1991, 116).
politicians.\textsuperscript{12} Last, NWF has long-standing conservation, education, and public outreach programs, and therefore has very strong ties to activists throughout the country. Together, these three provide an estimate of the broad spectrum of views present in 1991. For my data, California has the highest measurement, and Oregon has the lowest.

The core of the Banks-Weingast hypothesis is that truth and the bureaucrat’s signal are aligned when a low-cost monitoring technology and a concentrated interest group are present. This is tested by a three-way interaction between the measure of objective data, the incidence of right-to-know provisions in the state, and the concentration of the interest group. The primary theoretical expectation in this study is:

BW: As the combined value of the objective data, the existence of the monitoring technology, and the concentration of the group increases, the importance ranking increases.

I also include the base terms to test for the independent effects of information, monitoring mechanism, and concentration on the agency’s ranking of the problem.\textsuperscript{13} This places additional pressure on the ability of the model to supply evidence for the Banks-Weingast hypothesis. Rather than fitting a model where only the interaction is included, and in which all independent accounts based on these causal factors are suppressed, the approach here is to test the relative contribution of the hypothesis conditional on competing independent accounts. This is particularly important because if objective data has a strong and significant main effect on the rankings, this indicates that the contribution of the monitoring technology and the concentration of the group is limited. Similarly, information may not be necessary, but the group itself may be

\textsuperscript{12} Greenpeace also provides a proxy for estimating the effect of the grassroots movements that became so influential in hazardous waste policy during the 1980s. In this sense, though, the estimate based on Sierra, Greenpeace, and NWF is an under-estimate of the concentration of the constituency, and so continues the theme of this application being a particularly hard test for Banks-Weingast.

\textsuperscript{13} An auxiliary model that includes all second-order interactions is presented in the Technical Appendix.
able to press claims for higher rankings that are themselves out of line with any objective data.\textsuperscript{14} This offers three rival hypotheses: when (a) the objective data or (b) the concentration of the interest group increases, or (c) when the monitoring technology is present (ceteris paribus), the importance ranking is higher.

To put additional pressure on the Banks-Weingast hypothesis, I test for these effects in the context of other, competing accounts with separate footing in the literature on environmental decision-making. First, because of the long connection of hazardous waste policy to chemical industries, I test the connection between these rankings and the income concentration of the chemical industry in the state. My measure is the percentage of personal income in the state from the five major industrial sectors releasing the most toxics.\textsuperscript{15} My expectation here is that the income from these industries, the lower the ranking applied to any particular type of waste site.\textsuperscript{16} This produces an additional rival hypothesis: when the income penetration of the chemical industry is higher, the importance ranking is lower.

I add four additional organizational constraints that are present in the technical literature on how agencies consider remediation efforts at these types of polluted sites. First, I include the estimated cleanup costs of a type of site; I expect that this cost consideration will reduce the importance statement for a given site type because of budget constraints on the agency’s ability

\textsuperscript{14} This possibility (and the following rival hypothesis on the chemical industry workforce) are more direct tests of the traditional interpretation of the “capture” hypothesis (e.g., Bernstein 1955), which Banks and Weingast substantially reinterpret in their paper.

\textsuperscript{15} These industries are chemicals, primary metals, paper products, transportation, and fabricating metals (Chemical & Engineering News 1989). The states with the lowest measurements are Hawaii and Maine, and Delaware has the highest.

\textsuperscript{16} The reverse story is unlikely. There is strong evidence that this constituency receives compensation for hazards in wage structures associated with this industry (e.g., Thaler and Rosen 1976; Viscusi 1978). There is also significant evidence that workers’ subjective valuations of that risk are consistent with objective risk (Robinson 1990).
to remediate all of the sites expected to fall within their purview. The hypothesis here is: as the expected cost of cleanup increases, the importance ranking of the site type falls. Second, I expect that when a state bureaucracy has access to a dedicated source of cleanup funds, that the importance ranking increases; the advantage of a dedicated cleanup fund source is that it reduces the budget constraint pressure mentioned above (USEPA 1991). Third, I expect that states that employ a large number of FTE agency staff in the hazardous waste program are more likely to rank sites higher. The reason here is that significant manpower concerns control the willingness of the agency to set the public policy agenda toward increased remediation efforts (Day et al 1991). Finally, I test a rival hypothesis that addresses the general orientation of the state agency toward environmental protection efforts. The reason of including this is that agencies may adopt general orientations toward the regulation of a public policy problem, and encapsulate these orientations in their overall mission. The simplest means of assessing the degree to which an agency has encapsulated this kind of orientation is a broad index of the states’ commitment to environmental protection. My measure is the state’s composite score on the Green Index ranking. My rival hypothesis is that states with higher composite scores have higher importance rankings on the dependent variable.

**MODEL ESTIMATION AND RESULTS**

In this section, I offer the estimation of a statistical model to assess the relative explanatory power of the performance of the Banks-Weingast hypothesis in light of these

---

17 This estimate is also obtained from the ATSDR HazDat database by aggregating across the country all sites with cleanup efforts. The lowest measurement is for mining sites; the lowest is for TNT processing.
18 Forty-five percent of the observations were marked by a dedicated cleanup fund.
19 This measure is logged to account for high skew. The highest measurement is for New Jersey and the lowest is for South Dakota.
20 This measure is constructed from sixty-seven components, and is scored so that higher performance has a higher composite score (Hall and Kerr 1991, 147). The state with the highest measurement is New Jersey and the state with the lowest is South Dakota.
alternative, rival hypotheses. Because the dependent variable is an ordinal ranking, I estimate
the model by ordered logit with the calculation of Huber-White robust standard errors based on
the clustering of the multiple importance rankings from each state for each type of site.21 The
estimates for this model are shown in Table 1. The marginal effects for the covariates are shown
in the right columns.22 The $\chi^2$ statistic indicates that we can reject the joint hypothesis that the
coefficients for all of the covariates can be constrained to equal zero at a high level of
significance.

The main result here is that the coefficient for the interaction implied by the Banks-
Weingast hypothesis is positive and significant, and the marginal effects confirm that the
directions for higher and lower categories are consistent with this. This means that the
information asymmetry is mitigated in those cases where objective data suggest higher (or lower)
rankings, where there is a monitoring technology in place, and where the group is concentrated.
Moreover, none of the base variables for this interaction are significant and in the correct
direction.23 This provides a direct test of Banks and Weingast (1992): the effect of information
on statements is positive when a monitoring technology is in place and a concentrated group is
present. The independent effects of objective data, the monitoring mechanism, and the group are
not significant contributors to the agency’s public (agenda-setting) statements. In this case, the

\[ \text{Table 1 about here.} \]

\[ \text{Insert Table 1 about here.} \]

21 The advantage of an ordered logit procedure is that it is based on a latent regression, where the latent variable
underlies the ordinal ranking. The ordinal rankings are defined by how the covariates contribute to the latent score,
but the latent score is translated into the ordinal rankings in a censored way. The marginal effects for the covariates
are not the same as the estimated coefficients because they depend on which categorical (ordinal) outcome is being
considered (how the latent score has been transformed into the ordinal score with reference to thresholds).
22 Greene (2000) notes that marginal effects of the regressors are not equal to the coefficients. More importantly, the
marginal effects depend on the categories of the dependent variable. The marginal effects for dichotomous variables
are notoriously difficult to interpret.
agency’s statements and the objective data become aligned when both the technology and the group are present, but the information by itself does not directly contribute to the agency’s statements.

Two other effects bear discussion. First, the presence of a large chemical industry does seem to reduce the agency’s importance rankings across waste site types. However, this effect is independent of the role of information, or the combined role of monitoring and group concentration. It does not depend on the additional role of a monitoring technology or objective data, which suggests that either the measure proxies some sector-specific attributes of the state’s economy, or perhaps more importantly, that there remains some role for a traditional Bernsteinian capture-oriented theory for agencies even given the Banks-Weingast result. Second, increased agency staff also appears to reduce the likelihood of higher importance rankings; this may be due to hedging behavior on the part of the agency or the agency’s level of risk aversion (e.g., Krause 2003).

This study tests the principal claim that politicians design agencies to reduce the potential exploitation by bureaucrats of their expertise-based information asymmetry. The mechanism for collapsing that information asymmetry – for inducing truth-telling – is the combination of a low-cost monitoring technology staffed by a concentrated interest group. The results presented here, which are based on a cheap talk environment where real, objective data are ultimately available, indicate that this is so. This is the case when both sides of the prediction are observable – agencies are asked to reveal information when a technology may or may not be present, and

---

24 An additional model, which includes a second interaction between objective data, right-to-know, and the size of the chemical industry workforce, does not reveal any significant departures from the model in Table 1. The...
when an interest group may or may not be concentrated. Moreover, while survey evidence is inherently limited in its ability to gain truthful answers to questions with important public policy implications, this application simply provides a more difficult test for the Banks-Weingast hypothesis. This application is the first known attempt to quantitatively test this theoretical prediction, which serves as a formal building block for almost all successive models of asymmetric information in political-bureaucratic relations. The evidence presented here suggests that that has been a sound choice.

**DISCUSSION**

The purposes of this study are to review the logic of the Banks-Weingast prediction about political control of the bureaucracy under asymmetric information, to apply this theory to the case of hazardous waste policy, and to estimate a statistical model that tests the combined effect of objective data, monitoring technology, and a concentrated interest group on the importance statements bureaucrats made regarding a list of common public policy problems. In a direct test, I find evidence for the Banks-Weingast prediction: that those statements are aligned with objective conditions when both a monitoring technology (here, a right-to-know rule) is in place and a concentrated interest group (in this application, an environmental constituency) is present. The theoretical prediction is, of course, well known. The fact that there has been no known direct test of the Banks-Weingast hypothesis, though, was probably unanticipated by the authors. That there has been no direct empirical confirmation has not stopped theoretical development, and many of those theories have enriched our understanding of both politics and bureaucracies.

---

interaction is not significant, the original value of the chemical industry workforce remains significant, and all of the other effects discussed here continue to be significant at conventional levels.

25 Another concern may be the possibility of sample selection in these types of surveys. First, the fact that there is evidence for the hypothesis in the revealed (non-missing) importance statements provides some assurance in the Banks-Weingast hypothesis. Moreover, the model results are similar even when accounting for sample selection into the ordered logit stage of the analysis.
By providing this confirmation, this paper contributes to those literatures and also gives credit to the foresight of the original paper.

In this case, both monitoring cost attributes vary – both the existence of a low-cost monitoring technology, and the presence of an interest group. I show that importance statements are aligned with objective circumstances when both conditions are satisfied: when the technology is present and as the interest group becomes concentrated. The bureaucracy’s informational advantage collapses under these conditions, and the statements conform to those in a “truth-telling” equilibrium.

Two broad themes in this paper warrant emphasis, though. First, the Banks-Weingast argument depends on both a monitoring technology and a concentrated interest group being present; a degree of substitution exists, but movement to either extreme of the combination can cause politicians to anticipate a control problem in the presence of asymmetric information (where low-cost monitoring technologies are not available or where interest groups are too diffuse) and not create those agencies. This paper does not test this hypothesis, but instead tests the underlying reasoning about the two items’ combined effects. By identifying a population of observable agencies where both sides of the prediction are possible, I am at least able to fully test the primary hypothesis. Interestingly, the Banks-Weingast exhortation to study an agency that is terminated when the interested group becomes more diffuse has largely gone unheeded. Yet, their argument does not mean that the agencies I study here will not be terminated in the future, or that a monitoring technology will not be put in place. Rather, because of the evidence I offer here for their theoretical prediction, we have additional reasons to study agency terminations or redesign, especially in the case of asymmetric information.

More importantly, these results offer a unique insight into the ongoing debate over the
role of agencies in the agenda-setting stage of public policy. While accurate statements about policy problems may in fact bind organizational hands, whether the accurate revelation of information guarantees the agency will readily convert that information into responsive policy formation or implementation depends on the institutional design of the agencies themselves. When we hold agency design constant, we are unable to assess the agency’s performance in a world of asymmetric information. Recent studies that systematically compare agencies across sectors help fill that void in our understanding, yet those studies are largely disjoint from the study of bureaucratic responsiveness. By empirically reemphasizing the Banks-Weingast prediction about institutional structure, we move forward in our understanding of political control. Just as our understanding of bureaucratic responsiveness depends on our understanding of external actors’ preferences and strategies, and the information and beliefs they hold, so should we fully address the agenda-setting power of the bureaucrats themselves.
TECHNICAL APPENDIX

In this Appendix, I offer an auxiliary model to show that the findings in Table 1 are robust to specification bias. This bias may be introduced in one of two ways – by omitting lower-order interactions between each of the three base terms (objective data, monitoring technology, and concentrated interest group), or by including those lower-order interactions and sacrificing parsimony. Regardless, Table A1 shows that the inferences discussed above are robust to the introduction of lower-order interactions.

[Insert Table A1 about here.]
Table 1: A Test of the Banks-Weingast Hypothesis

<table>
<thead>
<tr>
<th></th>
<th>Model</th>
<th>Coefficient</th>
<th>Robust SE</th>
<th>Negligible</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective Data</td>
<td></td>
<td>0.0857</td>
<td>0.0743</td>
<td>-0.0093</td>
<td>-0.0102</td>
<td>0.0021</td>
<td>0.0175</td>
</tr>
<tr>
<td>Monitoring Technology</td>
<td></td>
<td>0.4417</td>
<td>0.2921</td>
<td>-0.0462</td>
<td>-0.0524</td>
<td>0.0069</td>
<td>0.0918</td>
</tr>
<tr>
<td>Concentration of Group</td>
<td></td>
<td>-0.0966</td>
<td>0.0260 ***</td>
<td>0.0105</td>
<td>0.0115</td>
<td>-0.0023</td>
<td>-0.0197</td>
</tr>
<tr>
<td>Banks-Weingast Interaction</td>
<td></td>
<td>0.0174</td>
<td>0.0070 **</td>
<td>-0.0019</td>
<td>-0.0021</td>
<td>0.0004</td>
<td>0.0035</td>
</tr>
<tr>
<td>Chemical Industry Workforce</td>
<td></td>
<td>-0.1100</td>
<td>0.0343 ***</td>
<td>0.0120</td>
<td>0.0131</td>
<td>-0.0027</td>
<td>-0.0224</td>
</tr>
<tr>
<td>Remediation Cost</td>
<td></td>
<td>0.1309</td>
<td>0.1295</td>
<td>-0.0142</td>
<td>-0.0156</td>
<td>0.0032</td>
<td>0.0266</td>
</tr>
<tr>
<td>Dedicated Fund</td>
<td></td>
<td>0.4179</td>
<td>0.3312</td>
<td>-0.0464</td>
<td>-0.0492</td>
<td>0.0115</td>
<td>0.0841</td>
</tr>
<tr>
<td>Agency Staff</td>
<td></td>
<td>-0.0017</td>
<td>0.0008 *</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0000</td>
<td>-0.0004</td>
</tr>
<tr>
<td>Environmental Commitment</td>
<td></td>
<td>0.0062</td>
<td>0.0154</td>
<td>-0.0007</td>
<td>-0.0007</td>
<td>0.0002</td>
<td>0.0013</td>
</tr>
</tbody>
</table>

| κ₁                              |                     | -0.7706     | 1.2734    |            |         |         |         |
| κ₂                              |                     | 0.5690      | 1.2834    |            |         |         |         |
| κ₃                              |                     | 2.1037      | 1.2891    |            |         |         |         |

| N                               |                     | 301         |           |            |         |         |         |
| Log Pseudo-Likelihood           |                     | -382.11     |           |            |         |         |         |
| Wald $\chi^2(9)$                |                     | 93.86 ***   |           |            |         |         |         |

*** indicates significance at better than p=0.001 (one-tailed test)
** indicates significance at better than p=0.01 (one-tailed test)
* indicates significance at better than p=0.05 (one-tailed test)
Table A1: Robustness Check: Inclusion of Lower-Order Interactions

<table>
<thead>
<tr>
<th>Model</th>
<th>Coefficient</th>
<th>Robust SE</th>
<th>Negligible</th>
<th>Low</th>
<th>Medium</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective Data</td>
<td>0.3596</td>
<td>0.2040</td>
<td>*</td>
<td>-0.0383</td>
<td>-0.0433</td>
<td>0.0088</td>
</tr>
<tr>
<td>Monitoring Technology</td>
<td>1.6586</td>
<td>0.6865</td>
<td>**</td>
<td>-0.1580</td>
<td>-0.1819</td>
<td>-0.0118</td>
</tr>
<tr>
<td>Concentration of Group</td>
<td>0.0081</td>
<td>0.0718</td>
<td>***</td>
<td>-0.0009</td>
<td>-0.0010</td>
<td>0.0002</td>
</tr>
<tr>
<td>Data*Technology</td>
<td>-0.3300</td>
<td>0.2062</td>
<td></td>
<td>0.0352</td>
<td>0.0398</td>
<td>-0.0080</td>
</tr>
<tr>
<td>Data*Group</td>
<td>-0.0298</td>
<td>0.0206</td>
<td></td>
<td>0.0032</td>
<td>0.0036</td>
<td>-0.0007</td>
</tr>
<tr>
<td>Technology*Group</td>
<td>-0.1474</td>
<td>0.0793</td>
<td>*</td>
<td>0.0157</td>
<td>0.0178</td>
<td>-0.0036</td>
</tr>
<tr>
<td>Banks-Weingast Interaction</td>
<td>0.0532</td>
<td>0.0206</td>
<td>**</td>
<td>-0.0057</td>
<td>-0.0064</td>
<td>0.0013</td>
</tr>
<tr>
<td>Chemical Industry Workforce</td>
<td>-0.1198</td>
<td>0.0277</td>
<td>***</td>
<td>0.0128</td>
<td>0.0144</td>
<td>-0.0029</td>
</tr>
<tr>
<td>Remediation Cost</td>
<td>0.1425</td>
<td>0.1396</td>
<td></td>
<td>-0.0152</td>
<td>-0.0172</td>
<td>0.0035</td>
</tr>
<tr>
<td>Dedicated Fund</td>
<td>0.3367</td>
<td>0.3045</td>
<td></td>
<td>-0.0365</td>
<td>-0.0403</td>
<td>0.0091</td>
</tr>
<tr>
<td>Agency Staff</td>
<td>-0.0017</td>
<td>0.0007</td>
<td>**</td>
<td>0.0002</td>
<td>0.0002</td>
<td>0.0000</td>
</tr>
<tr>
<td>Environmental Commitment</td>
<td>0.0051</td>
<td>0.0142</td>
<td></td>
<td>-0.0005</td>
<td>-0.0006</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

κ₁ 0.0074  1.4116
κ₂ 1.3633  1.4292
κ₃ 2.9174  1.4376

N 301
Log Pseudo-Likelihood -378.913
Wald χ²(12) 177.59 ***

*** indicates significance at better than p=0.001 (one-tailed test)
** indicates significance at better than p=0.01 (one-tailed test)
* indicates significance at better than p=0.05 (one-tailed test)
Works Cited


