Testing the Theoretical Determinants of Political Control over the Bureaucracy:

Taking Wood and Waterman Seriously

Kenneth J. Meier
Department of Political Science
Texas A&M University
College Station, TX 77845 USA
and
Cardiff Business School
Cardiff University
Cardiff, Wales, UK
kmeier@politics.tamu.edu

Daniel Hawes
Department of Political Science
Texas A&M University
College Station, TX 77845 USA
dhawes@politics.tamu.edu

and

Laurence J. O'Toole, Jr.
Department of Public Administration and Policy
School of Public and International Affairs
204 Baldwin Hall
The University of Georgia
Athens, GA 30602 USA
cmsotool@uga.edu

We would like to thank Rene Rocha and Eric Gonzalez Juenke for their research assistance.

Prepared for delivery at the annual meetings of the American Political Science Association, Chicago, IL, August 31, 2007.

Testing the Theoretical Determinants of Political Control over the Bureaucracy:

Taking Wood and Waterman Seriously

Abstract

After a series of sophisticated studies on the interface between bureaucracy and electoral institutions, Dan Wood, and Dan Wood along with Rick Waterman, concluded that it had been established that electoral institutions can control the bureaucracy, and research was now needed to move to the more interesting questions about what factors facilitate or limit this control. Since this call to arms, little progress has been made – probably because taking Wood's proposal seriously requires an extensive data set that measures a wide range of variables such as bureaucratic expertise, external political support for the bureaucracy, political preferences, clientele support, budget autonomy, and incentives – among others.

Using a unique data set of over 1000 public organizations, plus an interrupted time-series assessment of political control that is analogous to those used by Wood, this paper systematically tests several hypotheses about political control of the bureaucracy. All other things being equal, theory suggests that one would expect political control to be enhanced when a) bureaucrats share values with politicos; b) organizations exhibit relatively less cohesion, leadership, technical expertise, and external political support; and c) organizations are small, less complicatedly bureaucratic, and centralized. Resources available to the bureaucracy can also be expected to matter for political control. This paper tests a series of such hypotheses from spatial theory, Rourke's theory of bureaucratic power, and organization theory.

Testing the Theoretical Determinants of Political Control over the Bureaucracy: Taking Wood and Waterman Seriously

In 1991, Dan Wood and Rick Waterman ended their seminal study of political control of the bureaucracy with an unambiguous conclusion:

> We believe this evidence for active political control is so strong that controversy should now end over *whether* political control occurs . . . . Future research should turn toward exploring the *determinants* of political control. (Wood and Waterman 1991: 822)

In the sixteen years since publication of this challenge, the Wood and Waterman agenda has not been systematically examined. Some authors have criticized the starkness of this conclusion (Eisner, Worsham, and Ringquist 2000) and others have added some supporting evidence to the initial conclusion (Balla 1998; Canes-Wrone 2003; Chaney and Salzstein 1998; Corder 1998; Krause 1996; Mete 2002; Ringquist 1995), but we have yet to see a systematic effort to examine this central question concerning the relationship between bureaucracy and electoral institutions.

Perhaps one reason why no one has taken up the mantle of Wood and Waterman is the high standard for evidence that they themselves set for the field. What they term "political control" and others might term "political influence" was measured as a relationship rather than a variable. Using long time series of agency actions, Wood and Waterman constructed sophisticated models to control for past history of the agency, and then via intervention analysis determined if a political action (an executive appointment, a budget cut, a legislative hearing, etc.) was significantly related to a change in agency actions. The strength of the Wood and Waterman test is that they used seven federal regulatory agencies, and differences among these agencies and the political actions in regard to the agencies

provided leverage on determining the covariates of political control.

Wood and Waterman (1991;1994) focus primarily on political variables, given their interest in demonstrating political control. They recognize, however, that differences in bureaucratic agencies would explain much of the variance in the interface between bureaucracy and electoral institutions. Among the bureaucratic variables they suggest are the centralization of the agency decision processes, agency resources, bureaucratic structure, mission complexity, and agency constituencies (Wood and Waterman 1991, 822-3). Because many of these variables are relatively constant within a single agency over a short period of time, the obvious design is to collect data on numerous agencies that vary on these dimensions and then determine how these variables influence the relationship between political action and bureaucratic response. Given the extensive effort needed to construct even a single long time-series of agency actions, it is little wonder that no one has undertaken the Augean task of compiling a data set capable of extending the work of Wood and Waterman.

This paper seeks to take the research agenda of Wood and Waterman seriously and to create a data set capable of extending their work in some theoretically interesting directions. We do this by giving up some of the advantages of long time series on a small number of agencies in exchange for shorter time series for a much larger number of agencies. This approach sacrifices some of the richness of the variables that relate to the electoral institutions but compensates with a series of bureaucratic variables with sufficient variation to allow systematic hypothesis testing. First, the paper presents the logic of analysis in the Wood and Waterman studies to illustrate its general character. This section also then shows how political control is represented by a relationship and that variations in that relationship are the key to theoretically informed analysis. Second, a large pooled time-series data set of 1000+

agencies over a nine-year period is introduced along with definitions of key variables. Third, we then augment the Wood and Waterman findings by a systematic examination of three theoretical perspectives – spatial modeling, the political theory of Francis Rourke, and organization theory. Finally, we offer conclusions about the relationship between bureaucracy and elected officials and set out suggestions for future research.

The Logic of Political Control

Wood and Waterman (1991; 1993; 1994) and the previous work of Dan Wood (1988, 1990; 1992; Wood and Anderson 1993) use a simple but elegant design for assessing political control over the bureaucracy. They start with a time series of agency actions (generally outputs rather than outcomes) Y and seek to explain current values of Y_t with past values of Y using accepted time-series techniques as follows:

$$Y_t = \beta_1 Y_{t-1} + \varepsilon$$

Although the above equation is a simple autoregressive model, in practice Wood and Waterman use elaborate ARIMA models to account for history; the actual dependent variable, as a result, may be transformed via differencing or other manipulation. To this model, they can add a vector of control variables (X) that are thought to also be important to determining outputs, such as resource levels or the political ideology of the relevant oversight committee.

$$Y_t = \beta_1 Y_{t-1} + \beta_2 X_{t-1} + \varepsilon$$

Finally, Wood and Waterman create a political intervention variable Z that represents the appointment of a new administrator or some other political attempt at exerting control over the bureaucracy.

$$Y_t = \beta_1 Y_{t-1} + \beta_2 X_t + \beta_3 Z_t + \varepsilon$$

A significant β_3 coefficient, or a correlation between political factors and subsequent agency action, is then taken as evidence of political control over the bureaucracy. The simplicity of this general model should not be taken to imply that the actual models take precisely this form. The interventions are generally estimated with complex nonlinear functions, and such equations present significant modeling challenges to deal with serial correlation and other problems.

How might one transform this general model of political control into one that can assess the determinants of political control? After all, assessing the determinants of a variable generally means treating it as a dependent variable and modeling it. In the present case, the concept of interest – control – is a relationship between an intervention and agency outputs, subject to extensive controls. This model suggests that if we are interested in whether some other variable, W, influences the control relationship, then we are interested in whether or not the size of the political control relationship increases as the value of W increases (or decreases). In short, we expect W to augment the relationship between Z and Y as follows:

$$Y_t = \beta_1 Y_{t-1} + \beta_2 X_t + \beta_3 Z_t + \beta_4 Z_t W_t + \varepsilon$$

By augmenting the relationship, we mean that the conditioning ($\beta_4 Z_t W_t$) term will increase the impact of the intervention in a theoretically predicted direction. That is, if our theory contends that the variable in question should increase political influence, we would expect the β_4 coefficient to be positive. If our theory contends that the variable in question limits political influence, then we would expect the β_4 coefficient to be negative. The predicted direction is derived from theory. Because we examine nine dependent variables in this paper, we generate nine bits of information relevant to each of our hypotheses.

Defining Political Control

Wood and Waterman's previous work gives us a working definition of political control or political influence. A significant correlation between agency actions and political preferences serves to indicate political influence if adequate controls are in the model for the history of the agency and other relevant factors. Our specific study in this paper of Texas school districts uses Latino school board members and policies or programs that benefit Latino students. We take the relationship between Latino school board members and educational outcomes for Latino students as an indicator of political influence. Previous studies of legislatures (Hero and Tolbert 1995; Kerr and Miller 1997; Vigil 1997; Espino 2003) and bureaucracies (Hindera 1993; Meier and Stewart 1991; Selden 1997) have examined the ability of Latino legislators to make decisions that benefit Latinos in general. In both sets of studies descriptive/passive representation (being a Latino) was associated with substantive/active representation (actions that benefit Latino citizens).

Measures and Data

The Data

The units of analysis are 1043 public school districts in Texas for the years 1993 to 2001. Because data are reported only when at least five students in a district meet the reporting criterion (e.g., at least five Latino students taking an AP exam) and we lag the dependent variable, the actual number of cases varies from 7,713 for student attendance to 318 for advanced placement exam pass rates. More general indicators, such as attendance and performance on the required state test, have the most cases; indicators of elite performance, such as SAT scores or Advanced Placement (AP) classes, have the fewest. In addition, some outcome indicators were not collected in the earlier years of the data set.

All data were taken from the electronic files of the Texas Education Agency and cleaned for obvious errors.

A pooled time-series data set such as this one can be affected by problems with serial correlation and heteroscedasticity (Stimson 1985; Baltagi 1995; Beck and Katz 1995). Because the work in this area has for the most part been analyzed with dynamic specifications, we have opted to lag the dependent variable in all regressions. This process creates a set of fixed effects for each of the units of analysis that was able to generate an error pattern without serial correlation (see Beck 2007; Beck and Katz 2007).[1] Tests showed only minimal levels of heteroscedasticity; re-estimating the equations with Huber-White standard errors produced similar results.

Although most studies of political control do not justify the representativeness of their cases, little will be gained in the study of bureaucracy without an explicit consideration of organizational characteristics and how they compare to those of other bureaucratic units. School districts, the most common type of U.S. public bureaucracy, employ more individuals than any other kind of government organization. School districts in Texas are highly diverse, as one might expect in a heterogeneous state that contains approximately one of every 14 districts in the United States. Districts in the data set cover the gamut from urban to rural, rich to poor, monoracial to multi-racial.

As organizations, school districts are highly professional, decentralized organizations with a great deal of discretion vested in street-level bureaucrats. They fit Wilson's (1989) definition of craft

[1]The autoregressive coefficients indicate that these series are clearly stationary (ranges from .58 to .19) so that differencing the series would induce substantial serial correlation (likely of a moving average nature). We also replicated the results using individual dummy variables for each of the years and got similar results.

organizations. While such organizations have characteristics that appear to advantage bureaucrats in their interactions with politicians (e.g., professional expertise, decentralized structures, a craft-like technology), they also entail governance structures that facilitate political control. All districts but one in this study are independent school districts governed by an elected school board.[2] The school board appoints the chief operating officer (the superintendent), establishes the agency budget (as well as the tax rate), determines educational policy issues such as curriculum, and oversees the operations of the school systems.[3] Because school districts tend to be flat organizations, the distance between school board members and a teacher actually delivering services is relatively small. The transaction costs of attempting to influence the bureaucracy, as a result, should be less than for organizations where politicians have to penetrate several layers of hierarchy to influence the appropriate bureaucrats. Earlier research found that proximity to political overseers enhances control (Chaney and Salzstein 1998; see also Scholz, Twombly, and Headrick 1991); these sorts of local districts, therefore, should be good contexts for picking up political influences. Furthermore, as special districts executing only one type of policy, school districts permit political leaders to pay focused and sustained attention to control and performance in a single policy field without competition from a range of unrelated policy matters. Finally, no separation-of-powers issues arise to complicate the principal-agent link. The theoretical sensitivity of school districts to political influence, we feel, makes them the ideal venue for investigating

[2]A dependent school district has a school board appointed by another entity (e.g., the Mayor, the city council) and does not have independent taxing powers.

[3]Unlike some states that permit voters to act on district budgets, Texas vests this authority fully with the school board. Voters can only play a role in two instances: school bond referenda and school board elections. Such structures are similar to those that operate in most models of overhead democracy.

political control questions.

Representation: The Values' Surrogate

If we assume, as the empirical literature finds, that Latino school board members seek to improve the educational opportunities of Latino students, then the simple percentages of school board members who are Latino provide good measures of political preferences concerning Latino students. Is ethnicity a good surrogate to measure values in this situation? We believe that the ethnicity of school board members offers a suitable and perhaps superior alternative to those employed in past studies, which have used primarily interest group scores, partisan percentages, or budgetary shifts as proxies for political preferences (See Scholz and Wei 1986; Scholz, Twombly and Headrick 1991; Wood 1988; Balla and Wright 2001;Wood 1990; Ringquist 1995; Carpenter 1996; Krause 1996). While these are not necessarily flawed measures of political preferences, they are also not theoretically or empirically superior to ethnicity as a proxy for values. An extensive public opinion literature has demonstrated that Latinos hold political attitudes different from those of Anglos (Cain and Kiewiet 1984; de la Garza et al. 1992; Gimpel and Kaufmann 2001; Hood, Morris, and Shirkey 1997; Leal 2002; 2004; Martinez-Ebers et al. 2000); these differences grow substantially when the issue is salient to the Latino community – as with matters such as bilingual education, immigration, or affirmative action (Leal 2004; Espino 2004). While Latinos or any other group are not monolithic in attitudes, they do show a sufficient degree of consistency on key issues. Even the Cuban-American population, which differs significantly on foreign policy issues (primarily focused on Cuba), shares issues positions with other Latinos on domestic issues. This commonality of interests is likely to be particularly evident when the outcomes being studied directly affect clients of the same ethnicity, as they do in this study.

We constructed the school board ethnicity variable by using information from the U.S. Census, the Texas Association of School Boards, the National Association of Latino Elected Officials, and an original survey (see appendix A for specifics). All other data were taken from the Texas Educational Agency (TEA). Between 1993 and 2001 the average school district in Texas had 9.2% Latino board members (s = 21.3).

Dependent Variables

Public bureaucracies have multiple goals (Downs 1967; Simon 1947; Thompson 1967), and school districts are no exception. Even if one ignores the broader educational objectives of creating democratic citizens and focuses solely on student performance, school systems provide numerous programs aimed at a wide variety of goals – ensuring attendance, preventing dropouts, mastering basic skills, preparing students for college, etc. Even though some goals might be held in higher regard than others, Latino politicians are likely concerned with Latino student performance relative to all these goals. To provide as complete a view as possible, this study uses nine different performance indicators for Latino students.

At the low end of the performance scale, students need to attend school to gain any benefits from the process. Our measure is the percentage of Latino students attending class. We also considered using dropout rates but decided not to do so owing to the quality of the data. Dropout data in general are problematic; student populations are highly mobile, and schools may not know if a student has dropped out of school rather than moved and have little incentive to find out. In addition, at least one major school district in our sample (Houston ISD) was caught reporting false dropout data in 2003.

Basic skills achievement tests are a moderate-level goal for school districts. Texas, during this time period, administered the Texas Assessment of Academic Skills (TAAS) to students in grades 3 through 8 and as an exit exam.[4] Our performance measure is the percentage of Latino students who passed all of the various TAAS tests (e.g., math, reading, writing, etc.) at all grade levels.

Within a school system, the quality of education will vary from school to school and classroom to classroom. To tap some of this variation in educational quality, we use three indicators: the percentage of Latino students who gain access to advanced classes, the percentage who take advanced placement (AP) classes, and the percentage who pass advanced placement exams. AP classes are designed to be college-level classes; students who take these classes and pass the national exam with a grade of 3 or higher may get college credit depending on policies at specific colleges and universities.

For top-end indicators, we include four measures of college preparation. These include the percentage of Latino students who take either the ACT or SAT exam, the average Latino SAT score, the average Latino ACT score, and the percentage of Latino students who score above 1110 on the SAT or its ACT equivalent (defined by the state of Texas as an indicator of potential college success). Students who do not take either exam are unlikely to attend college. Texas has large percentages of students take both the SAT and the ACT so that results are generally not affected by the performance of a small number of students.

The nine performance indicators for Latino students are clearly distinct from each other. The

[4]The test was changed in 2003 to the Texas Assessment of Knowledge and Skills (TAKS). Results of the two exams are highly correlated.

average of the 26 intercorrelations between the indicators was only .18, and eight of the correlations were actually negative (albeit very small). A factor analysis of the nine indicators revealed three significant factors with no single factor accounting for more than 34% of the variance.[5]

The nine dependent variables include both policy outputs (advanced classes, taking the college boards) and outcomes (test scores). Some of these variables are more easily determined by policies and thus more amenable to the influence of political actors; others are jointly determined by a wide variety of forces and the influence of school boards is likely to be indirect and remote. This range in tractability is an advantage for studies of political influence because it allows one to assess the influence relationships in situations that vary substantially in terms of difficulty.

Control Variables

Three distinct types of control variables are included in the analysis. The first is a lagged dependent variable. The standard empirical question in the political control literature derives from its longitudinal designs: Does bureau A change what it is doing at time t (versus t-1) after some political activity takes place. This control for history is usually done via either complex ARIMA modeling or by lagging the dependent variable (see Wood and Waterman 1994; Wood 1992). Because we have only nine years of data and thus could not generate ARIMA estimates of any reliability, we include a lagged dependent variable in all models. This procedure gives us a precise estimate of the autoregressive nature of the policy process.

---

[5]The factor scores are not useful for analysis given the list-wise deletion of missing values. The factor analysis as a result is based on less than 4% of the total school districts (those with reportable data on every indicator).

The second control variable represents general school district performance. Some Latino student will do better simply because they attend better or more challenging schools. Because Latinos, especially recent immigrants, face a segmented labor market that discourages them from pursuing many professions, the literature also suggests the possibility that the pool of Latino teachers could be more talented than the pool of Anglo or black teachers (Meier, Wrinkle and Polinard 1999). Other studies argue that nondiscriminatory bureaucracies are more likely to be effective simply because they do not consider nonproductive factors such as race, gender or ethnicity (Becker 1993). Both arguments indicate that a control for non-Latino student performance might be appropriate, either because Latinos attend better schools or because Latino school board members could be associated with better performance for all students, not just performance by Latino students. For each indicator, therefore, we control for Anglo student performance on the same indicator (that is, for Latino SAT scores we include Anglo SAT scores in the model). This control requires that Latino school board members affect Latino students over and above the impact that they might have on Anglo students (see Weiher 2000).

The third set of controls are the standard production function variables (Hanushek 1996; Hedges and Greenwald 1996) and can be clustered into two groups: resources and constraints. Bureaucracies cannot influence outcomes without resources. Five resource indicators, all commonly used in education production functions, are included in all models: average teacher salary, per student instructional spending, class size, average years of teacher experience, and percentage of teachers who are not certified (see Burtless 1996). Three measures of constraints include the percentage of African American, Latino and poor students; the last-mentioned is measured by students eligible for free or

reduced price school lunches.

Although the production function literature specifies directional hypotheses for each control variable, the actual direction of relationships in this study is not obvious. Because each equation controls for Anglo student performance, these control variables must affect Latino performance over and above their impact on Anglo performance. For teachers' salaries to matter, therefore, better paid teachers would need to benefit Latino students more than they benefit Anglo students. While there is a modest literature on differential impacts (Jencks and Phillips 1998), it indicates little consistency in regard to expectations. The controls should be viewed merely as an effort to make sure key factors are not left out of the model rather than to estimate precise impacts for each control variable.[6]

Findings

The Political Control Base Line

Political influence over the bureaucracy, some would even suggest political control, is commonly demonstrated by showing that variables representing political factors are correlated with bureaucratic outputs or outcomes. To set a baseline for this argument, nine regressions were run with the full set of control variables and Latino school board membership as the political variable. The results appear in Tables 1 and 2.

[Tables 1 and 2 about here]

The results suggest a fair amount of political influence on policy outcomes generated by the education system. Eight of the nine relationships are statistically significant and in the predicted

[6]Similarly, we are not concerned with collinearity among the control variables.

direction. Greater Latino school board representation is associated with more Latino students passing the TAAS, attending school, taking advanced classes, taking AP classes, and taking college board tests. Latino representation is also positively related to Latino SAT scores, Latino ACT scores, and high college board scores (above 1110 on the SAT). In one case, passing advanced placement exams, the relationship is negative and significant. While some of the relationships are small, it would be unrealistic to expect massive impacts from political forces, given that most of the indicators are policy outcomes rather than policy outputs.[7] That is, for the most part these are not measures of what the bureaucracy does (an exception might be advanced classes and AP classes), but rather measures of actual changes in Latino student performance. Such a set of findings, given the difficulty in influencing such factors (Jencks and Phillips 1998; Burtless 1996), would be considered optimistic in the education policy literature and supportive in the political control literature.

We have demonstrated that Latino school districts are sensitive to a variable measuring political preferences in the presence of other variables. The next task is to illustrate that these equations can be used to determine the bureaucratic factors that facilitate or retard this political influence by examining equations that condition political values with these bureaucratic factors.

Spatial Theory

Our first test is a relatively simple one to illustrate the potential of our approach to analysis. Formal theories of bureaucracy and legislatures make a great deal of the preferences or policy ideal

[7]The long-run impacts, however, might be substantial, given that these are autoregressive systems. One can estimate these long term impact by calculating how the coefficient for the lagged dependent variable distributes these political influence impacts over future years.

points of the two institutions (see McCubbins, Noll and Weingast 1987, 1989; McCubbins and Schwartz 1984). Using such preferences, they then derive theoretical implications or make arguments on the feasibility of various elements of political control. Using the logic that was introduced above, we can generate an estimate of the preferences or the policy ideal point on issues of Latino education by using the ethnicity of the school board members. Similarly, the ethnicity of the teaching faculty serves as a good indicator of the preferences of the bureaucracy; in fact, extensive studies of representative bureaucracy have linked Latino bureaucrats to policy outputs and outcomes that positively benefit Latino clientele (see Selden 1997; Meier and O'Toole 2006 and the references cited therein).

A simple lesson from the bureaucratic theory work is that a legislature is more likely to get what it wants from a bureaucracy if the bureaucracy has a policy ideal point similar to that of the legislature. This idea might even be considered trivial in the substantive literature, but some have argued that political control works best when politicians seek to move the bureaucracy in directions that the bureaucracy is likely to support (Meier 2000).

To the nine equations in tables 1 and 2, we add an additional term that multiplies the percentage of Latino school board members by the percentage of Latino teachers. This equation seeks to determine a conditioning effect rather than an interaction, since it does not also contain Latino teachers as a variable by itself. We take this approach for two reasons. First, our objective is not to provide the best empirical estimation of these policy variables. We know that Latino teachers are associated with benefits for Latino students, and in fact, the teachers variable is often powerful enough to swamp the impact of the school board variable. Theoretically we are interested in whether or not politicians get more of what they want under given sets of conditions. To do this, we need to allow the political

variable to have some leverage on the dependent variable, as it does in Tables 1 and 2, and determine if this leverage increases or decreases.

Table 3 shows one of the nine equations with Latino teachers – that for TAAS pass rates for Latino students. This equation can be used to show the slope of the line linking political representation to agency actions, as follows:

$$\text{Slope} = .0058 + .00094 \text{ (Latino teachers)}$$

At zero percent Latino teachers (a relatively common phenomenon, even in Texas), a one percentage point increase in Latino school board representation is associated with only a .0058 point gain in Latino test schools (approximately one tenth the size of the impact in Table 1). At 26.2 percent Latino teachers (one standard deviation above the mean), the slope jumps to .0324. The predicted slope in this estimation exceeds the size of the slope in Table 1 when the percentage of Latino teachers exceeds 62%, or approximately 4 percent of the total cases (well within the range of the data, however, since some districts have 100% Latino teachers). We take this result as evidence that bureaucratic agreement with the goals of politicians increases the probability that politicians will get what they want.

[Table 3 about here]

We repeat this process with the eight other policy variables. Since our concern is whether or not the conditioning term increased the size of the political coefficient, table 4 simply presents the direction of change induced by the conditioning term. The theory predicts a positive change, and in eight of the nine cases the results show a positive change. If Latino teachers were unrelated to the ability of politicians to get actions they desire, then we would expect that these coefficients would change randomly, half positive and half negative. If the variables were unrelated, that is, independent of

each other, what is the probability that we could get eight or more positive relationships in nine tries? This can be determined with a binomial probability distribution; the probability of eight or more positive results out of nine would be .002 if the outcomes were equally probable. While the theoretical question in this instance may not be of earth-shaking significance, we can be very confident that bureaucratic support for political goals enhances the ability of politicians to achieve the results they desire.

[Table 4 about here]

Bureaucratic Politics

Our second set of tests takes on a more significant perspective, that of Francis Rourke (1976) and his theory of bureaucratic politics. Rourke is concerned with bureaucratic independence rather than political control, but these can be considered two sides of the same coin. Rourke proposes that four variables determine bureaucratic power (and thus bureaucratic independence): political support, leadership, cohesion, and expertise. If we can create adequate measures of these concepts, then we can provide the same type of analysis as that displayed in Table 4 to assess how well Rourke's theory helps to explain political influence. In the current context we would expect the conditioning terms for political support, leadership, cohesion and expertise to each generate negative coefficients – that is, to reduce the level of political control.

Creating measures of cohesion, leadership, expertise, and political support for a bureaucracy is not an easy task, and we should expect that there would be some measurement error in the process. What might bureaucratic cohesion mean in the context of Latino education policy? Because the focus is on race and ethnicity and because we posited that ethnicity was a good surrogate for values, then the

homogeneity of the bureaucracy in terms of race and ethnicity should indicate a consensus on these values. Value consensus should be a reasonable measure of cohesion. We use a modification of the Blau dissimilarity index; we sum the squared percentages of teachers who are Latino, black, Anglo, and other (and then divided by 100 to get a variable with a theoretical maximum of 100). The variable had a mean of 84.7 and a standard deviation of 8.1. The values indicate that Texas school district remain fairly monoracial even though the dominant racial group does vary somewhat.

A summary of the interaction effects of cohesion and the political control coefficient appear in column 1 of table 5. In seven of the nine cases, an increase in organizational cohesion is associated with a decline in the strength of the political control relationship (binomial probability $p = .0898$). The two exceptions are ACT scores and passing AP exams, both variables that are difficult to influence as illustrated by the results in Table 2.

[Table 5 about here]

Leadership is an exceedingly difficult concept to measure; efforts to do so have generated a massive literature in both psychology and management. The present analysis opts for an extant measure of managerial quality developed by Meier and O'Toole (2002). Essentially they predicted school superintendents' salaries using organizational, human capital, and other characteristics that should predict salaries, and then argued that the residual from this equation was correlated with a judgement by the school board as to the quality of the manager (they document the market-like nature of superintendent salaries). That measure is standardized to a mean of zero and a standard deviation of one and is strongly related to a wide variety of general performance measures (see Meier and O'Toole 2002).

The second column of Table 5 presents the directional change of the political control coefficients when conditioned with the leadership variable. Strong leadership should be associated with a decline in political control. Similar to cohesion, in seven of the nine cases the coefficient is negative, thus indicating a decline in political control (p=.0898). The two exceptions are access to advanced classes and passing AP exams.

Expertise is generally thought of as the possession of knowledge that lay politicians do not have. In the context of education where the technology of the process is well understood (even if the content of classes is not), the level of expertise cannot be considered to be a major advantage. We use as our measure of expertise the percentage of teachers who are certified to teach in the classes they currently teach. The average district has 95.9% of teachers certified, but the large standard deviation of 5.3 indicates a fairly large negative skew. Certification is a minimum level of expertise but is more likely to reflect expertise than advanced degrees, which are a response to the incentives built into local pay systems and generally are not in subject specialization but rather in education.

The third column of Table 5 shows the results of expertise as it conditions political influence. Expertise should reduce the influence of political influence, so that the sign of the combined coefficient should be negative. In seven of the nine cases the predicted negative sign appears; the probability of seven or more negative relationships out nine if the relationships were random is .0898. Both expertise variables in the positive direction are policy outputs (advanced classes and taking the college boards) rather than policy outcomes.

In the U.S. political system, the fragmentation of political power (Long 1952) means that bureaucracies need to cultivate public support to survive and flourish. This support can range from

specific clientele support to general public opinion. To measure public support, superintendents were asked to rate the quality of the community support for the school district on a five-point scale ranging from excellent to inadequate. The mean was 3.8 with a standard deviation of 0.8.

The final column in Table 5 shows how greater community support affects the influence of the political branch. Because political support should contribute to bureaucratic independence, the prediction is the relationship will be negative; once again, in seven of the nine cases a negative relationship appears (as explained earlier, the probability for this pattern is .0898). The exceptions are the problematic passing AP classes (three of the four relationships are not as predicted) and taking the college boards. In the former case, the relatively small number of cases over a short period of time could be contributing to unreliable estimates.

Table 5 as a whole indicates that Rourke's theory of bureaucratic correctly predicts a decline in political control in 28 of the 36 cases. As the sample of cases grows, quite obviously the statistical significance of the pattern becomes more easy to achieve. The probability of achieving 28 or more negative relationships out of 36 drops to .0025. So while we do not get a unanimous confirmation of Rourke's theory of bureaucratic power, we have reasonably strong support that the factors that contribute to bureaucratic power are also factors that limit political influence over the bureaucracy.

Organization Theory

Our final set of tests involves four hypotheses that are loosely taken from organization theory. Some of these hypotheses are suggested by Wood and Waterman (1991); others can be found

elsewhere in the literature (Durant 1993).[8] One variable that seems logical to consider is organizational size. Because larger organizations are likely to be more routinized and exhibit more elaborate communication patterns, one would expect that top-down political control would be more difficult, all things being equal. We measure size of these organizations by the natural log of total enrollment. When we multiply this size variable with the political influence variable, we essentially get a random pattern (see Table 6). Five of the nine relationships are in the predicted negative direction; a pattern that is predicted to occur by chance exactly fifty percent of the time.

[Table 6 about here]

Political influence over bureaucracy might be limited by the distance between the politicians and the street-level bureaucrats whose behavior is in question (see Downs 1967 for a classic argument suggesting that organizational "leakage of authority" is a function of the number of bureaucratic layers). Chaney and Salzstein (1998) also make this argument in regard to urban governments. One possible way to measure the distance of politicians from the street-level bureaucrats is the percentage of agency employees who are managers rather than production personnel; managers add to the layering of organizations (see Light 1995). In the case of school boards, we measure this managerial size with the sum of central office and school administrators as a percentage of total personnel. School districts are relatively lean organizations in terms of management; the average district had 4.7% administrators (standard deviation 1.7), and this lack of variation might be part of the reason for the mixed results in column 2 of Table 6. The size of the bureaucratic component is negatively associated with reduced

[8]Since the field of organization theory is itself vast, these hypotheses are illustrative rather than comprehensive.

political control in only four of the nine cases, essentially a random result ($p = .75$).

In his study of natural resources policy, Robert Durant (1993) argues that budget cuts early in the Reagan administration so sapped the administrative capacity of these agencies that when the Reagan administration sought policy change, the agencies were no longer capable of responding. Durant's study suggests that resources, or perhaps more accurately organizational slack, is related to the ability of an agency to respond to political pressures. We measure resources by the total revenue per pupil of the school districts. In this study, the mean level of resources is $6256 per pupil with a standard deviation of $2151, reflecting the large differences in resources of Texas school districts. The resources-times-representation coefficients are shown in column 3 of Table 6. In this case we have a clear case of support for Durant's contention. In nine of the nine cases, greater slack resources is associated with more political influence over agency actions. The probability of nine positive relationship out of nine is .002.

The resources finding raises an interesting normative question in regard to the political control literature. Theories like Rourke's hold that bureaucracies do not respond to political initiatives because they do not want to do so and that they have the resources to resist. Arguments like Durant's imply that bureaucracies are generally responsive institutions and that the key variable might be the *ability* to respond rather than the willingness to respond.

The final aspect of organizations to be considered is centralization. Wood and Waterman (1991) find evidence that agencies in the executive branch are more responsive to political forces and go on to suggest that centralization might also be a factor. To measure centralization, we focus on the administrative component of the organization (after all, these are school systems, and much of the day-

to-day activity is highly decentralized). Our measure of centralization is the ratio of central administration to that of school level administration. Higher ratios should indicate more decisions are made centrally and that the organization is more amenable to centralized control. The measure has a mean of .67 (standard deviation = .49) which means the average school district has two central office bureaucrats for every three campus level administrators. Column four again shows a fairly random pattern. Only four of the relationships are in the predicted positive direction, a pattern that indicate that centralization does not matter in terms of political influence.

Conclusion

The research program of Dan Wood, including his work with Rick Waterman, not only provides intriguing evidence but also explicitly sketches a research agenda that should have high salience for those interested in the subject of political control of, or influence over, the bureaucracy. The fact that this agenda – assessing and estimating the determinants of such political control, as these vary by numerous aspects of agency, context, and political support – has not been addressed until now probably speaks to the difficulty of conducting such systematic work with enough cases in suitable empirical settings. The present paper, which adopts an approach similar to that of Wood but greatly expands the number of bureaucratic units studied, offers a method for taking Dan Wood and colleagues seriously. It also demonstrates the method by exploring and testing hypotheses derived from several theoretical approaches to understanding the control (or its obverse, independence) of public bureaucratic units.

The evidence presented in this paper shows that the broad expectation sketched by Wood and Waterman – that theory should be able to provide insights as to the determinants of political influence –

is correct. Indeed, the study also provides evidence validating several of the expectations of Wood and Waterman regarding specific features that might affect the extent of political control. To test the broad notion, we have introduced a rather extensive set of controls and then applied theoretical ideas from the world of spatial modeling, from one influential exposition of the influences over bureaucratic independence, and from the vast literature on organization theory to sort through a number of the hypothesized determinants of political control.

The evidence shows a number of interesting patterns. First, political principals are more likely to get what they want from bureaucracies when the ideal point for the latter is closer to that of the principals themselves. The fact that this expectation is unsurprising should not make the demonstration of its validity any less important.

Second, the evidence from more than 1000 sub-national public organizations is rather strongly in support of Rourke's theory of bureaucratic power, despite the facts that his theory was developed more than a generation ago and its primary focus was on U.S. federal agencies. Rourke asserted in effect that political control would be more likely when organizations score lower in cohesion, leadership, expertise, and political support. The patterns of findings across nine dependent variables suggest evidence on behalf of each of these expectations; and the overall array of results (28 of 36 finding consistent with expectations, despite some measurement error undoubtedly included in the independent variables and one potentially problematic – and much smaller-n – dependent variable: AP exam pass rates) is strongly in support of the theory.

Third, the study of organizations offers a large number of possible points of theoretical leverage on the question of political control. A set of these are incorporated in this paper to illustrate the

possibilities. While organizational size, bureaucratic distance, and organizational centralization appear to have little to do with political control, at least as judged from these data, resources available to the organizations are unambiguously associated with political influence. Of particular interest is that the findings for this variable favor the theoretical argument that resources enhance bureaucratic capacity to act, and thus action favored by political principals; this causal logic stands in contrast to that arguing that the way to keep bureaucracy in line is via the tight leash of limited resources.[9]

Indeed, this last-mentioned finding carries implications that might seem counterintuitive to the inclinations of some political actors. If validated through further investigation, the connection shown here between resources and influence by principals suggests that those concerned about accountability and political responsiveness would do well to invest in their bureaucracies rather than strap them down with mandates, directives, and reporting requirements to the point of apparent excess.

Beyond the specifics of the findings reported here, this paper suggests that a range of additional possible determinants of political influence over the bureaucracy can be systematically investigated. These include other organizational characteristics such as budget autonomy, specialization, administrative appointments, prior performance or specific clientele support. Political variables such as size of mandate, cohesion of the political sovereigns, or turnover among political sovereigns might also be tested. Continuing along this line of research, therefore, promises to sort through additional theoretical ideas and therefore further the effort to treat Dan Wood seriously. In addition, some

---

[9]Another possibility is that there could be a three-way relationship where increased slack is associated with greater political control, but only when policy preferences of the political and bureaucratic institutions converge (e.g. a conditioning effect between Latino teachers, resources, and Latino school board members)

determinants may be contingent upon the presence of others – there may be nonlinear aspects to the congealing of political control.

The research, therefore, can be extended in additional theoretical directions. Efforts should also be made to explore the determinants in multiple-principal governance systems, although that step would necessarily mean moving from school districts to other kinds of settings and therefore might also mean sacrificing the large-n advantages of the present study.

The most general conclusion to be drawn from this investigation is that, on the basis of this examination of more than 1000 governments, it is clear that the bureaucracy is able to exercise some independent influence over the outputs and outcomes of public policy, but that political principals can indeed influence what the bureaucracy does. How much influence depends on many factors, including several that have been identified or implied in earlier theoretical work. Additional empirical work informed by appropriate theory is likely to specify still further the determinants of political control.

References

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

Balla, Steven J., and John R. Wright. 2001. "Interest Groups, Advisory Committees and Congressional Control of the Bureaucracy." *American Journal of Political Science* 45 (October): 799-813.

Baltagi, Badi H. 1995. *Econometric Analysis of Panel Data*. New York: John Wiley and Sons.

Beck, Nathaniel. 2007. "From Statistical Nuisances to Serious Modeling: Changing How We Think About the Analysis of Times Series-Cross-Section Data." *Political Analysis* 15 (Spring), 97-100.

Beck, Nathaniel and Jonathan N. Katz. 1995. "What to Do (and Not to Do) with Time-Series-Cross-Section Data." *American Political Science Review* 89 (September): 634-647.

Beck, Nathaniel and Jonathan N. Katz. 2007. "Random Coefficient Models for Time Series Cross-Section Data: Monte Carlo Experiments" *Political Analysis* 15: 182-195.

Becker, Gary S. 1993. *Human Capital*. 3rd Ed. Chicago: University of Chicago Press.

Burtless, Gary D. 1996. *Does Money Matter?* Washington, D.C.: Brookings Institution.

Cain, Bruce and D. Roderick Kiewiet. 1984. "Ethnicity and Electoral Choice: Mexican American Voting Behavior in the California 30th Congressional District." *Social Science Quarterly* 65: 315-27.

Canes-Wrone, Brandice. 2003. "Bureaucratic Decisions and the Composition of the Lower Courts." *American Journal of Political Science* 47(2): 205-214.

Carpenter, Daniel P. 1996. "Adaptive Signal Processing, Hierarchy, and Budgetary Control in Federal Regulation." *American Political Science Review* 90 (June): 283-302.

Chaney, Carole Kennedy, and Grace Hall Saltzstein. 1998. "Democratic Control and Bureaucratic Responsiveness: The Police and Domestic Violence." *American Journal of Political Science* 42 (July): 745-768.

Corder, Kevin. 1998. "Political Control of Federal Credit Subsidy: Small Business Administration 7(a) Loan Guarantees." *American Review of Public Administration* 28 (June): 166-87.

de la Garza, Rodolfo, Louis DeSipio, F. Chris Garcia, John Garcia, and Angelo Falcon. 1992. *Latino Voices*. Boulder, CO: Westview Press.

Downs, Anthony. 1967. *Inside Bureaucracy*. Boston: Little-Brown.

Durant, Robert. 1993. *The Administrative Presidency Revisited*. Albany: State University of New York Press.

Eisner, Marc Allen, Jeff Worsham, and Evan J. Ringquist. 2000. *Contemporary Regulatory Policy*. Boulder: Lynne Reinner.

Espino, Rodolfo III. 2003. "Electoral Influences on Latino Representation in Congress: Responsiveness to Populations or Electorates." Paper presented at the National Meeting of the Midwest Political Science Association, April 3, Chicago.

Espino, Rodolfo III. 2004. "Minority Interests, Majority Rules: Representation of Latinos in the U.S. Congress." Unpublished PhD Dissertation, Department of Political Science, University of Wisconsin-Madison.

Gimpel, James and Karen Kaufmann. 2001. "Impossible Dream or Distant Reality? Republican

Efforts to Attract Latino Voters." Washington, DC: Center for Immigration Studies.

Hanushek, Erik. 1996. "School Resources and Student Performance." In *Does Money Matter*?, Gary Burtless, ed. Washington, D.C.: Brookings Institution.

Hedges, Larry V., and Rob Greenwald. 1996. "Have Times Changed? The Relation Between School Resources and Student Performance." In *Does Money Matter*?, Gary Burtless, ed. Washington, D.C.: Brookings.

Hero Rodney E., and Carolyn J. Tolbert. 1995. "Latinos and Substantive Representation in the U.S. House of Representatives." *American Journal of Political Science* 39:640-52.

Hindera, John J. 1993. "Representative Bureaucracy: Further Evidence of Active Representation in the EEOC District Offices." *Journal of Public Administration Research and Theory* 3 (October): 415–430.

Hood, M.V., Irwin Morris, and Kurt Shirkey. 1997. "!Quedate o Vente!: Uncovering the Determinants of Hispanic Public Opinion Toward Immigration." *Political Research Quarterly* 50: 627-647.

Jencks, Christopher, and Meredith Phillips. 1998. *The Black-White Test Score Gap*. Washington, D.C.: The Brookings Institution.

Kerr, Brinck, and Will Miller. 1997. "Latino Representation: It's Direct and Indirect." *American Journal of Political Science* 41 (July): 1066-1071.

Krause, George A. 1996. "The Institutional Dynamics of Policy Administration: Bureaucratic Influence Over Securities Regulation." *American Journal of Political Science* 40 (November): 1083–1121.

Leal, David L. 2002. "Political Participation by Latino Non-Citizens in the United States." *British Journal of Political Science* 32: 353-370.

Leal, David L. 2004. "Latino Public Opinion." unpublished manuscript, Department of Government, University of Texas.

Light, Paul C. 1995. *Thickening Government: Federal Hierarchy and the Diffusion of Accountability*. Washington, DC: Brookings.

Long, Norton E. 1952. "Bureaucracy and Constitutionalism." *American Political Science Review* 46 (September): 808–818.

Martinez-Ebers, Valerie, Luis Fraga, Linda Lopez, and Arturo Vega. 2000. "Latino Interests in Education, Health and Criminal Justice Policy." *PS: Political Science and Politics* 33: 547-554.

McCubbins, Matthew D., Roger G Noll, and Berry Weingast. 1987. "Administrative Procedures as Instruments of Popular Control." *Journal of Law, economics, and Organization* 3: 243-277.

McCubbins, Matthew D., Roger G Noll, and Berry Weingast. 1989. "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies." *Virginia Law Review* 75(2): 431-482.

McCubbins, Matthew D., and Thomas Schwartz. 1984. "Congressional Oversight Overlooked: Police Patrols versus Fire Alarms." *American Journal of Political Science* 28(Feb): 165-179.

Meier, Kenneth J. 2000. *Politics and the Bureaucracy*. Fort Worth: Harcourt Brace

Meier, Kenneth J., and Laurence J. O'Toole, Jr. 2002. "Public Management and Organizational

Performance: The Impact of Managerial Quality." *Journal of Policy Analysis and Management* 21(Fall): 629-643.

Meier, Kenneth J., and Laurence J. O'Toole, Jr. 2006. *Bureaucracy in a Democratic State: A Governance Perspective.* Baltimore: The John Hopkins University Press.

Meier, Kenneth J., and Joseph Stewart Jr. 1991. *The Politics of Hispanic Education.* Albany: State University of New York Press.

Meier, Kenneth J., Robert D. Wrinkle, and J.L. Polinard. 1999. "Representative Bureaucracy and Distributional Equity: Addressing the Hard Question." *Journal of Politics* 61 (November): 1025-39.

Mete, Mihriye. 2002. "Bureaucratic Behavior in Strategic Environments: Politicians, Taxpayers, and the IRS." *Journal of Politics* 64:2 384-407.

Ringquist, Evan J. 1995. "Political Control and Policy Impact in EPA's Office of Water Quality." *American Journal of Political Science* 39 (May): 336-363.

Rourke, Francis. 1976. *Variations in Agency Power: Bureaucracy, Politics and Public Policy.* 2nd Ed. Boston: Little-Brown.

Scholz, John T., Jim Twombly, and Barbara Headrick. 1991. "Street-Level Political Controls Over Federal Bureaucracy." *American Political Science Review* 85 (September): 829-850.

Scholz, John T., and Feng Heng Wei. 1986. "Regulatory Performance in a Federalist System." *American Political Science Review* 80 (December): 1249-1270.

Selden, Sally C. 1997. *The Promise of Representative Bureaucracy.* New York: M.E. Sharpe Publishers.

Simon, Herbert A. 1947. *Administrative Behavior*. New York: The Free Press.

Stimson, James. 1985. "Regression in Time and Space: A Statistical Essay." *American Journal of Political Science* 29 (November): 914-947.

Thompson, James D. 1967. *Organizations in Action*. New York: McGraw Hill.

Vigil, Maurilio E. 1997. "Hispanics in the 103rd Congress." Pp. 234-64 in *Pursuing Power: Latinos in the Political System*, F. Chris Garcia, ed. Notre Dame: University of Notre Dame Press.

Weiher, Gregory R. 2000. "Minority Student Achievement: Passive Representation and Social Context in Schools." *Journal of Politics* 62(August): 886-895.

Wilson, James Q. 1989. *Bureaucracy: What Government Agencies Do and Why They Do It.* New York: Basic Books.

Wood, B. Dan. 1988. "Principals, Bureaucrats, and Responsiveness in Clean Air Enforcements." *American Political Science Review* 82 (March): 213-34.

Wood, B. Dan. 1990. "Does Politics Make A Difference at the EEOC?" *American Journal of Political Science* 34 (May): 503-530.

Wood, B. Dan. 1992. "Modeling Federal Implementation as a System." *American Journal of Political Science* 36 (February): 40–67.

Wood, B. Dan, and James E. Anderson. 1993. "The Politics of U.S. Antitrust Regulation." *American Journal of Political Science* 37 (February): 1-39.

Wood, B. Dan, and Richard Waterman. 1991. "The Dynamics of Political Control of the Bureaucracy." *American Political Science Review* 85 (September): 801-828.

Wood, B. Dan, and Richard Waterman. 1993. "The Dynamics of Political-Bureaucratic Adaptation."

American Journal of Political Science 37 (May): 497-528.

Wood, B. Dan, and Richard Waterman. 1994. *Bureaucratic Dynamics*. Boulder, CO: Westview Press.

Table 1. Political Influence on the Bureaucracy:

The Base Estimations

Dependent Variables = Percent Hispanic Students Who Independent Variables	Pass Test	Attend Daily	Advanced Classes	Take AP	Pass AP
Political Control					
Latino Board Percent	.058*	.003*	.055*	.036*	-.093*
	(6.95)	(5.44)	(7.69)	(3.21)	(1.96)
Controls					
Lagged Dependent Variable	.423	.579	.251	.331	.445
	(47.16)	(70.32)	(23.65)	(13.10)	(9.56)
Anglo Performance	.518	.321	.517	.336	.393
	(37.50)	(28.50)	(48.82)	(21.58)	(7.30)
Teacher Salary (000)	.715	.001	-.073	.198	1.865
	(13.84)	(3.21)	(2.12)	(1.87)	(2.96)
Instructional $ (000)	-.179	.046	.204	-.132	-5.630
	(0.64)	(2.25)	(0.19)	(0.30)	(1.45)
Black Student %	-.107	-.002	-.054	-.016	-.183
	(9.53)	(2.07)	(5.53)	(0.91)	(1.58)
Latino Student %	-.148	-.008	-.074	-.026	.041
	(16.05)	(11.61)	(9.20)	(1.72)	(0.40)
Low Income %	.078	.006	.025	-.020	-.053
	(7.65)	(7.39)	(2.71)	(1.18)	(0.49)
Class Size	-.187	-.006	.022	-.142	-2.079
	(2.17)	(0.89)	(0.27)	(0.95)	(1.86)
Teacher Experience	-.292	-.029	-.140	-.281	-.536
	(4.76)	(6.06)	(2.60)	(2.82)	(0.88)
Noncertified Teachers	.050	.006	.090	.022	.235
	(2.03)	(3.24)	(3.89)	(0.59)	(0.85)
Adjusted R-squared	.72	.59	.43	.54	.62
Standard error	9.66	0.78	7.41	5.75	14.60
F	1843.72	1026.89	428.44	142.37	47.90
N	7702	7713	6240	1307	317

*p < .05 one tail test

#p < .10 one tail test
directional t-tests are not appropriate for the control variables. Critical values are 1.96 for P <.05 and 1.65 for p < .10

Table 2. Political Influence on the Bureaucracy II:

The Base Regressions

Dependent Variables = Percent Hispanic Students Who	Take	SAT	ACT	Above
Independent Variables	Test	Score	Score	1110
Political Control				
Latino Board Percent	.152*	.177*	.003#	.020#
	(6.92)	(1.95)	(1.56)	(1.62)
Controls				
Lagged Dependent Variable	.329	.271	.216	.193
	(18.90)	(10.40)	(9.23)	(8.63)
Anglo Performance	.340	.433	.275	.207
	(13.81)	(14.65)	(10.92)	(10.94)
Teacher Salary (000)	-.118	1.513	.016	.413
	(0.84)	(2.13)	(1.37)	(4.95)
Instructional $ (000)	1.815	-1.240	.017	-.541
	(1.75)	(0.19)	(0.16)	(0.73)
Black Student %	-.066	-.433	-.009	.010
	(1.96)	(2.80)	(2.24)	(0.45)
Latino Student %	-.046	-.332	-.011	.001
	(1.45)	(2.38)	(3.75)	(0.05)
Low Income %	-.124	-.661	-.015	-.165
	(3.52)	(4.20)	(4.55)	(7.31)
Class Size	.118	-.179	.058	.069
	(0.37)	(0.12)	(2.12)	(0.36)
Teacher Experience	-.292	-.753	-.018	-.245
	(1.49)	(0.77)	(0.90)	(1.94)
Noncertified Teachers	-.111	.564	.004	.044
	(1.21)	(1.17)	(0.38)	(0.70)
Adjusted R-squared	.31	.60	.43	.37
Standard error	15.41	48.24	1.15	8.31
F	109.41	174.07	117.42	107.20
N	2623	1283	1748	1968

*p < .05 one tail test
#p < .10 one tail test

directional t-tests are not appropriate for the control variables. Critical values are 1.96 for P <.05 and 1.65 for p < .10

Table 3. Political Influence and Bureaucratic Values:

An Illustration

Dependent Variables = Percent Hispanic Students Who Pass TAAS

Independent Variables	Slope	t-score
Political Control		
Latino Board Percent	.006	0.45
Latino Board x Latino Teachers x100	.094	5.45
Controls		
Lagged Dependent Variable	.420	46.68
Anglo Performance	.525	37.90
Teacher Salary (000)	.705	13.66
Instructional $ (000)	-.138	0.49
Black Student %	-.101	8.95
Latino Student %	-.144	15.63
Low Income %	.072	7.03
Class Size	-.211	2.45
Teacher Experience	-.286	4.67
Noncertified Teachers	.037	1.77
Adjusted R-squared	.73	
Standard error	9.64	
F	1698.85	
N	7702	

Range of marginal impact for Latino Board Members .0058 to .9375

Table 4. Bureaucratic Values: Other Dependent Variables

Dependent Variable	Slope of the Interaction
Attendance	+
Advanced Classes	+
Take AP Classes	+
Pass AP Classes	+
Take SAT/ACT	+
ACT Average	-
SAT Average	+
Above 1110	+

Consistent Predictions 8 of 9, probability = .002

Note all predictions of theory are positive

Table 5. Rourke's Theory of Bureaucratic Power and Political Influence

Dependent Variable	Cohesion	Leadership	Expertise	Political Support
TAAS Score	-	-	-	-
Attendance	-	-	-	-
Advanced Classes	-	+	+	-
Take AP Classes	-	-	-	-
Pass AP	+	+	-	+
Take SAT/ACT	-	-	+	+
ACT Average	+	-	-	-
SAT Average	-	-	-	-
1110+	-	-	-	-
Probability	.0898	.0898	.0898	.0898

Overall probability = .002

Table 6. Hypotheses from Organization Theory

Dependent Variable	Size	Bureaucracy	Resources	Centralization
TAAS Score	-	+	+	+
Attendance	-	+	+	+
Advanced Classes	-	+	+	+
Take AP Classes	-	+	+	-
Pass AP	+	-	+	-
Take SAT/ACT	+	-	+	+
ACT Average	+	+	+	-
SAT Average	-	-	+	-
1110+	+	-	+	-
Probability	.5000	.746	.0025	.746

Overall probability = .002

Appendix A. Constructing the School Board Ethnicity Measure

To obtain annual data on Latino representation for school districts from 1993-2001 we started with the 1992 Census of Government's survey of school boards. While that survey asked both board size and board member ethnicity, it was the last survey the census conducted on this question (they also did a similar survey in 1987). We obtained the ethnicity of school board membership from the Texas Association of School Boards for 1999. Because those data had several missing cases, we conducted additional phone calls to 300 districts to complete the data set. These two surveys were taken as good data for the 1992 and 1999 school years. We then took the annual compilations of the National Association of Latino Elected Officials (NALEO) to make adjustments. The NALEO data are conceded to contain errors in their counts of elected officials, particularly at the local level, so the NALEO data were not used directly as estimates. As an illustration, in 83 cases NALEO reported more Latinos on the school board than there were school board seats. Rather, when NALEO showed an increase of one (or more) school board members over the previous year, we coded representation in our data set as increasing by one (or more if the numbers increased more). Similar codes were entered for declines. NALEO's data were carefully screened to eliminate cases of double counting (frequently when a seat changed hands, NALEO would include both the old representative and the new representative). These adjustments provided our estimates for school years 1993-98 and 2000-1. In a small number of cases, the percentage of Latino board members exceeded 100% because we could not verify which of the board members were double counted. In those cases, the percentage was coded as 100%. We then further checked this data set for errors by examining outliers, that is, districts that appeared to have too many or too few representatives given their population numbers. This process located three errors made by the U.S. Census (Bosqueville, Rivercrest, and East Bernard were each coded as having seven Latino board members by the Census). We could find no evidence that any of these districts ever had even a single Latino board member and thus recoded them as zero.