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ABSTRACT

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Politics, Culture, and Education Goals 2000:

The Politics of Systemic Education Reform in the American States

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Abstract

This paper examines the determinants of systemic education reform in the American states. Socioeconomic, political, and cultural variables are all found to affect the level of systemic education policy in each state. Unlike many studies of policy determinants, urbanization is negatively associated with this particular policy. The political factors partisan competition and legislative turnover are also found to significantly inhibit systemic reform, but this result reverses within traditionalistic political cultures. Political culture also has a strong influence state enactment of this type of policy, showing the reluctance of traditionalistic cultures to adopt new legislative programs. These results suggest that political and cultural variables both play important roles in the creation of state policies and that the determinants these policies differ across both policy type and substantive area.

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Education reform has entered a "second wave" after the first efforts of the early and mid 1980s. The first wave began with the report "A Nation at Risk" (National Commission On Excellence in Education 1983) and sought to improve education through increased spending, more academic content in the classroom, and the setting of minimum standards for both teachers and students which were monitored through standardized testing. The second wave, dubbed the "restructuring movement", seeks to reorganize instruction in order to improve teaching and learning (Sizer 1984). A number of approaches to school restructuring exist, but the creation of coherent education policy through systemic reform represents a well known and widespread effort within the restructuring movement. Systemic education policy consists of three parts. First, an ambitious set of outcome expectations must be defined for students. These goals would describe what society wants its students to learn. Second, education policies must be coordinated to prepare students to meet the outcome goals. Thus, policies would be mutually reinforcing and interlocked instead of piecemeal and contradictory. Finally, school governance would be structured to achieve these policies, enable students to meet the goals set out for them as best as possible, and successfully continue these policies while focusing resources where most needed (Marsh and Odden 1991; Odden 1991; Smith and O'Day 1991).

Supporters of systemic education reform note that many shortcomings in American education policy stem from its contradictory nature and ambiguity (Fuhrman 1993). These conditions stem from many aspects of American education. First, the policy making system is fragmented into federal, state and local entities. Further, these bodies have separate structures at each level (Fuhrman 1993). Second, policy makers' continuing need to secure reelection drives much of their behavior (Mayhew 1973). Legislators attempt to gain the attention of their constituents by taking public stands on issues while avoiding controversy (Salmore and Salmore 1990). Such actions make coalition building more difficult and less stable when education issues become polarized and divisive. Third, policy making responsibilities have increased as states have taken on a more active role in setting policy. Local districts have also increased their activity as schools have also taken on more responsibilities over the past thirty years (Cohen 1982; Elmore and Fuhrman 1990). Fourth, this expansion in activity has led to more specialization among policy makers, particularly among legislative committees. Such organizational changes help to increase individual expertise in an area and allow more division of labor. However, legislators on such specialized committees develop relationships with these particular interests in order to gain electoral support. These relationships lead to increased power for more narrow constituencies (Fiorina 1977). Specialization has also occurred among administrative agencies. The tendency to establish a separate government program for each particular problem created a type of "picket fence federalism." Competition arises among functional program areas further fragments policy making (Wright 1988).

Advocates of systemic reform seek to create more coherent policy by first agreeing upon basic educational objectives and setting in place mechanisms to insure that these goals are met. Thus, systemic reform seeks to set clear and ambitious goals for students and hold them accountable for achieving them. Placing high stakes upon student performances, which are linked to what they are supposed to actually learn, will create incentives for students to learn and schools to teach them in the most effective manner possible. Once that effort is achieved, other education policies can be tailored to support these basic aims, and governance structures can be designed to best allow schools to help students reach their goals. Thus, this strategy seeks to coordinate government actions by obtaining some agreement over the primary goals or aims. The first step

towards systemic reform is to establish a coherent system of instructional guidance (Fuhrman 1993). Though many efforts to ensure accountability occurred prior to the mid-1980s, most of these reforms emphasized basic skills and minimum standards. This type of policy spelled out the minimum content that students should learn, rather than delineating what skills the system would like to see all of its students master. Further, testing of students consisted of standardized tests that had little or no connection to what student learned in the classroom. Clearly, the incoherence identified by systemic reformers afflicted these early efforts to raise standards.

The National Governor's Association proposed changes compatible with systemic reform in 1986 when it suggested that restructuring be combined with performance accountability (National Governor's Association 1986). States would allow more latitude for local schools to govern themselves and, in return, these schools would evaluate and publicize how students were achieving. In 1989 the Association and President George Bush drafted the "America 2000" plan, calling for the creation of national standards throughout the states. When one of this project's chief architects, Governor Bill Clinton, was elected President in 1992, the plan gained additional momentum. With the President's support, the bill was renamed Goals 2000, passed Congress, and was signed into law in March of 1994. The legislation created a system of grants to award to organizations and states seeking to create education standards and assessments and foster national consensus upon and coordination of these programs. Still, the program is voluntary. No requirement exists for states to adopt any of the standards. The expressed goal is to create "national, not federal, standards" on a state by state basis (Fuhrman 1994; Ravitch 1995). The states retain their traditional role as the primary setters of education policy for curriculum, testing, and assessment. Though federal assistance and incentives facilitate this process, the success of systemic education policy depends upon states enacting these reforms on their own. This study analyzes the various conditions that lead states to adopt and develop this type of education reform.

Why do states enact systemic reform? What conditions and contexts lead to the adoption of these types of policies? The literature on cross state comparisons of policy outputs has traditionally placed the most emphasis upon socioeconomic variables. Indeed, many studies have failed to find any meaningful effect from political variables upon policy outcomes when controlling for socioeconomic influences (Dye 1986, Sharkansky 1968; and Jennings 1979). Some recent studies have found that public opinion and ideology play an important role in policy outputs. (Wright, Erikson, and McIver 1985; Erikson, Wright, and McIver 1993). However, examination of the influence of public opinion upon education spending found no significant effects (Lowery, Gray, and Hager 1989). A critique of these types of studies (Hwang and Gray 1990) points out that methodological problems may account for previous failures to find effects from political variables. In particular, past work failed to take into account heteroskedasticity among independent variables. This problem leads unreliable standards errors and  $R^2$ 's, which may cause incorrect results from T-tests and F-tests (Kmenta 1988). Therefore, the failure to detect significant political effects could well have been caused by problems with the data rather than the nonexistence of such factors. Hwang and Gray found that this problem did, in fact, occur among the independent variables in their study. When they used a weighted least squares approach to control for the heteroskedasticity, they found significant political effects upon state welfare policy. However, the same study found no significant political effects upon the level of education spending, repeating the findings of earlier research (Hwang and Gray 1990).

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Systemic education reform presents a challenge to ordinary approaches to the determinants of public policy. First, it represents a new direction in education policy, which is an innovation. The study of policy innovation has greatly benefited from the development of the policy diffusion literature. This work has become particularly adept at explaining structural and contextual factors behind change. Analyzing state data over time distinguishes regional or other diffusion patterns from socioeconomic and political contexts (Gray 1994; Berry and Berry (multiple cites)). However, some policies take on a distinctly national pattern in their adoption and do not show any particular pattern to their diffusion among the states. Such policies gather nationwide support and are rapidly adopted by many states (Wirt and Kirst 1992). Contacts or consensus among professional organizations aids the speed of this process. Goals 2000 and the efforts that preceded the law mobilized nationwide support for systemic education reform. Federal grants supporting the development of standards have further promoted such policies. The speed and breadth of these adoptions does not allow for the effects from regional diffusion, making a study over time impossible. Further, classic innovation studies view legislative adoption of a policy and state enactment as one and the same event. Yet, the complicated and intertwined elements of systemic education reform make it too complex to meaningfully measure as simply an up or down decision. Virtually all states have enacted some components of systemic reform, but, it is only the interaction of a number of policies working in coordination that actually achieve this type of innovation, as its name suggests (Fuhrman 1993).

### **Conceptualizing Systemic Reform**

Systemic reform consists of three essential elements. First, states must set ambitious outcome expectations for its education system. Second, education policies must be coordinated to help students meet these expectations. Finally, states must reorganize school governance systems to effectively manage schools in achieving these goals. The key to this effort lies in the creation of a coherent system of instructional guidance. This system must begin with the setting of high standards for students, who must all be expected to achieve them. Once this first part has been accomplished it builds incentives for the coordination of policy and reorganization of school governance to occur (Smith and O'Day 1993). Therefore, this study focuses upon state progress in setting educational standards for its students in a manner that promotes instructional coherence. State curriculum and testing practices, the primary policy areas in which this reform takes place, resemble a complicated patchwork of policies (Blank and Schilder 1990). Almost all states have some official curriculum and test their students in one way or another. However, huge differences exist in the rigor, extent, and purpose of these programs. Many curriculums simply list topics and give little or no guidance as to what exactly students should learn. Further, even fewer states make any consistent effort to ensure that the curriculum is actually taught in the classroom. Testing practices, rather than measuring what happens to students in classrooms, often separate the students even further from what they are officially supposed to learn. This lack of connection occurs because most exams are standardized assessments (usually in the form of computer scored multiple choice questions) that are referenced to national norms, as opposed to an absolute measure of what a student should know, and the tests are designed to be independent of any curriculum. This format makes the exams simpler to administrate and grade, and they allow easy comparison of students from different districts or states. However, these tests also function as motivational tools to affect student behavior. In effect, the exams tell students that what they

learn in class has little or nothing to do with their academic achievement (Powell 1993). Further, these exams offer little assistance in determining what should be taught in a classroom, since it is independent of the assessment. The independence of assessment, curriculum, and instruction amply demonstrates the fragmentation that characterizes education policy. In a coherent instructional system, the curriculum should determine what is to be taught, standards should be set from that curriculum, and tests should ascertain whether or not these standards have been met. These parts all interlock in order to create a logical, reinforcing system. When these parts do not support each other or are contradictory, their value becomes greatly diminished. Tying together the elements of curriculum and testing represents a primary concern for systemic reform (Fuhrman 1993). Within each state, structural and contextual factors promote and inhibit this type of reform. Previous research into state policy making can provide insights to the effects of these factors upon education policy.

### **Accounting for State Differences in Systemic Reform**

Socioeconomic variables often explain most of the variance in state policies, eclipsing most or all effects from political factors. Researchers have found few significant effects from political variables in the policy determinants literature. However, these findings may be due more to problems with the data rather than a lack of political influence. Heteroskedasticity among independent variables causes inefficient, though unbiased, coefficients in OLS and also produces biased  $R^2$ 's. Thus, T-tests of the significance of individual slopes and F-tests of the significance of the joint impact of variables may be incorrect. These data problems are particularly acute when studying state spending practices, where a policy is depicted as the dollar amount spent by a state. Many previous studies have failed to take heteroskedasticity into account, and their results may be inaccurate (Hwang and Gray 1991). When Hwang and Gray used weighted least squares to control for heteroskedasticity, they found significant effects from political variables upon state spending in welfare policy but not for education policy. The authors claimed that the level of education spending resembles a developmental policy more than a redistributive one. Developmental policies enhance a state's economic position, whereas redistributive policies hurt a state's economy but help the poor. Thus, developmental policies tend to gather more consensual support and, thus, would not be affected by the partisan political variables they employed. In addition to the type of policy in question, socioeconomic variables also presumably exert greater influence upon policies involving substantial spending as opposed to those that do not. This dominance in one area does not preclude more pronounced political influences over other education policies.

Systemic education reform primarily concerns testing and curriculum issues that do not involve large amounts of state spending. Thus, socioeconomic variables may not play such a dominant role in determining state action on this issue. However, these variables should exhibit significant effects, as demonstrated in previous. Higher levels of economic development have been associated with greater demands for policy outputs among the public, as well as greater state ability to meet these demands. Therefore, higher income, industrialization, and urbanization should be associated with state enactment of systemic reform. However, urbanization has been negatively correlated with educational spending (Hwang and Grey 1990). Therefore, it may produce a negative effect upon systemic reform as well. The level of state educational achievement provides a rough estimate of the need for education reform, though the anticipated

direction of this effect is unclear. States with lower overall achievement have more need to raise the quality of their educational outcomes and, thus, be more likely to enact systemic reform measures. However, those states with higher achievement may have more interest in raising the quality of their educational programs. Thus, the direction of achievement's effect cannot be determined. This measure relies upon SAT scores, so it also includes a variable for the proportion of the population that takes the SAT. This variable controls for the tendency for state mean scores to drop as the proportion of students taking the exam rises.

Population diversity may also play a role in the extent of reform at the state level. Curriculum issues tend to incite different cultural, ethnic, and racial groups to actively influence how their respective groups are depicted or represented by public schools (Ravitch 1995). Such situations make agreement upon overall curriculums more difficult as the diversity of the population increases. Further, minority populations sometimes view curricular and testing reforms as potentially harmful to their particular groups, whether through lack of representation in a curriculum or through the diversion of educational resources from traditional redistributive policies. Thus, divisions in opinion associated with population diversity could well inhibit state enactment of systemic reform. A rough proxy for the diversity of a state is the proportion of its nonwhite population. Though this measure does not take into account all ethnic and cultural differences within races, it does capture much of this diversity. The role of controversy and political tension is an important factor that is further explored through the political variables.

Major education policy initiatives tend to be shaped by a very small number of key actors (Mitchell 1981). Most legislative actors take an essentially passive stance towards most policy making. A number of factors account for this elitist vision of policy making. All of the burdens associated with education policy must be seen in light of the desire of legislators to get reelected (Mayhew 1973). Education policy can be ill suited to benefit legislators in this effort. State education policy has rapidly expanded since the 1960s. The states carry out much more policy activity which demands more attention and increasing specialization among legislators who wish to develop their expertise in the area (Fuhrman and Elmore 1990). The more complex arena of education policy makes it less likely that the larger public will pay close attention to any one part. At the same time, the fragmentation of policy making creates a system in which it is very hard for anyone to make a personal mark. Further, governors have become important players in education policy making, creating competition with legislative leaders. This situation attracts attention from the legislature and increases the opportunity costs to legislators for getting involved. These costs increase because adding more decision makers to the process raises the amount of bargaining necessary to achieve consensus. These negotiations raise the costs while reducing overall chances of consensus. Further, the governor may take the credit when a policy does succeed, thus denying publicity to legislators. Though bills involving large amounts of resources, such as education finance, generate widespread legislative interest, much state activity goes largely unnoticed by the public. Interest groups, however, do not share this lack of interest and have become increasingly active in education policy making (Fuhrman and Elmore 1990, Wirt and Kirst 1992). It has become difficult to carry out education policies without annoying some particular clientele. The polarization of this area makes it a veritable minefield for political actors to enter. The public at large does not closely follow the many facets of education policy, reducing the changes for advertising by legislators. At the same time, the greater scrutiny and activity by interest groups makes the process more acrimonious and potentially damaging for legislators who annoy these specialized groups. The high costs and low returns to legislators in the electoral

arena induce many to leave much of the decision making on education issues to committee chairs, legislative leaders, and the governor, especially for non-finance issues (Rosenthal and Fuhrman 1981).

Systemic education reform, at least in its initial form, does not involve copious state spending. Thus, the issue should not gather as much attention as finance issues. Further, the coalition formed by the National Governor's Association and Presidents Bush and Clinton unites a broad range of groups from both political parties. Therefore, partisanship and ideology should have little influence over systemic reform, contrary to what has been found by others (Wright, Erikson, and McIver 1985; Erikson, Wright, and McIver 1993). Further, the relatively undemocratic manner in which much education policy making occurs suggests that political variables positively associated with state innovation may have a very different effect upon this process. The literature on innovation suggests that partisan competition and promote state level innovation because legislators provide service to their constituents in order to gain their support for reelection. In states where competition and turnover are very high, legislators are less secure in their positions and, thus, work harder to maintain the attention and good opinion of their constituents. Subsequently, lawmakers in unstable electoral arenas will tend to enact more innovations and policies in order to satisfy the public and win reelection. Scholars such as Key have claimed that the absence of party competition distances the legislature from its constituents (Key 1949).

Due to its relatively elitist setting, innovation in education policy may reap benefits from more secure and stable legislative settings. Relatively secure legislators may feel free to enact controversial legislation without fear of immediate electoral reprisals. Further, this insulation from public opinion may moderate demands for instant solutions and results from programs. Systemic reform demands that policies be carefully developed and enacted, which cannot be accomplished in a single legislative term. Stable legislative education committees which develop expertise over time, are not as vulnerable to being defeated for reelection and, thus, have some protection from public opinion should have more capacity to enact reform than those in high turnover states. Therefore, the political variables party competition and turnover should be negatively correlated with systemic reform, the opposite of their effects in many other innovation studies. Further, as the level of competition and turnover rises, the costs of taking unpopular or controversial positions can quickly rise to the point that much policy making activity is stifled. Such a condition may be represented by an interactive effect. Party competition and turnover measure separate concepts, but both can promote instability among legislators' positions. Thus, both factors in combination may create more instability. Consequently, the interaction of competition and turnover should lead to decreasing levels of systemic reform.

Political culture also may affect education reform. Elazar has suggested how different political cultures conceptualize the purposes of government action and popular participation, claiming that states can be divided into three types of subcultures: individualistic, moralistic, and traditionalistic. The individualistic subculture promotes the marketplace, viewing its upkeep as government's role. The moralistic subculture values the commonwealth, seeing government's role as the promotion of the common good, thus playing a more active and positive role than in the individualistic subculture. The traditionalistic subculture seeks to maintain existing social and economic hierarchies. It holds ambivalent views of the common good and the marketplace as aims of government (Elazar 1984). Previous research has found traditionalistic state to be the least likely to innovate while the moralistic states adopted the most new policies (Ritt 1974).

Karning and Sigelman 1975) Thus, higher levels of systemic reform should occur among moralistic states and less reform among traditionalistic states. Political culture's effects may also go beyond direct influences upon systemic reform. Culture's role in defining the purpose of government and political participation will also influence political factors such as partisan competition and legislative turnover. For example, these two variables may have different influences within moralistic states, where participation is more valued, than in traditionalistic states, which have a more elitist tradition. Legislative responsiveness to the public may not create such divisive tensions in moralistic states where more pluralistic debate is favored, and this responsiveness may be doubly polarizing within traditionalistic states where open participation is not highly prized. The different values placed upon participation should lead to competition and turnover having a stronger inhibiting effect upon systemic reform within traditionalistic cultures and less within moralistic cultures. To simplify the model, this cultural effect is operationalized with competition and turnover simultaneously in a three way interaction. The model was also run with separate interactions between political culture, turnover, and competition separately. The coefficient estimates did not exhibit any marked changes. The overall fit of the model changed modestly, which would be expected from adding more independent variables, but the significance of the individual coefficients was reduced by widespread multicollinearity. Therefore, the three way interaction terms were kept in the final model.

### Variables and Data

A coherent system of instruction, the first step in systemic education reform, can be summarized in four crucial parts. First, new curriculum frameworks delineate the content to be provided in the core disciplines of reading/language arts and writing, mathematics, social studies or history, science, and geography. Second, challenging student performance standards must describe what students should know and be able to accomplish in each content area. Third, performance based assessments shall replace the previous, norm-referenced, multiple choice tests. Finally, monitoring systems must record annual student achievement across schools, districts, and/or states (Pechman and LaGuarda 1993). In sum, states must identify what students should learn, define just what must be accomplished to demonstrate that the material has been learned, assess how well the students achieve this goal, and report the findings.

The dependent variable was operationalized with data consisting of state by state measures for each of the four elements of a coherent instruction system. Each of the four factors was coded on a scale of 0 to 2 to describe whether the state has done nothing, is developing that program, or is already implementing that element of the system (0 = no action, 1 = developing, 2 = implementing).<sup>1</sup> The overall score was aggregated to create a scale of 0 to 8 for each state. Each of these four elements plays a crucial role in creating systemic reform. The correlation matrix for these four factors shows that, though there is much correlation between them, the elements are separate and distinct (See Table 1). The dependent variable, as constructed, is not fully continuous as required standard OLS procedures. However, virtually no variable is truly continuous and this condition can be viewed a continuum rather than an absolute requirement.

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<sup>1</sup> These measures were developed and measured by the Policy Studies Associates, sponsored by the U.S. Department of Education, Office of Policy and Planning, under Contract No. LC 89089001 (Pechman and Laguarda 1993)

The large number of values (nine total) that this variable can take are sufficient to classify it as continuous. (Berry 1993).

**Table 1:  
Pearson Correlation Coefficients for the Four Elements of Systemic Reform**

	Curriculum	Standards	Assessments	Monitoring
Curriculum	1.00000			
Standards	0.27506	1.00000		
Assessments	0.51988	0.74139	1.00000	
Monitoring	0.44844	0.34125	0.47337	1.00000

The independent variables are operationalized as follows:

Wealth (denoted as **INCOME**) = personal income, per capita, in 1990; States In Profile 1991: B-1.

Urbanization (denoted as **URBAN**) = population living in metropolitan area as percentage of total population of the state in 1990; Statistical Abstract of the United States, 1992: 29.

Industrialization (denoted as **INDUS**) = work force employed in non-agricultural establishment as percent of total workforce employed in 1990; Statistical Abstract of the United States 1992: 384, 404

Population Diversity (denoted as **DIVERSE**) = nonwhite population as percentage of total population of the state in 1990; Statistical Abstract of the United States 1992: 24.

Educational Achievement (denoted as **SAT**) = mean score for all students taking the Scholastic Achievement Test (now the Scholastic Aptitude Test) in each state in 1990; Digest of Education Statistics 1991

SAT Control Variable (denoted **LPROP**) = log of the proportion of students taking the SAT exam in each state Digest of Education Statistics 1991<sup>2</sup>

<sup>2</sup> The logarithmic function of the proportion of students taking the SAT in each state was found to have the most predictive power and better captures the relationship between this variable and mean state SAT scores (Dynarski 1987).

Party Competition (denoted as **COMPETE**) = the absolute value of the distance from completely competitive state parties on Ranney Index of party competition<sup>3</sup> for 1980-1990. The Ranney method computes an index in which 5 signifies purely competitive two party systems while 0 denotes total Republican control and 1 denotes total democratic control. This study transforms that index into a range of 0 to 100 in which 0 denotes total Democratic or Republican control and 100 denotes a purely competitive two party system. The model also uses the log of this figure (denoted as **LCOMPETE**)<sup>4</sup>.

Legislative Turnover (denoted **TURNOVER**) = average turnover of legislative seats from 1980-1990 as a percentage of total seats (Book of the States 1980-1991).

Interaction between Competition and Turnover (denoted **COMPTURN**) = Party Competition \* Legislative Turnover.

Political Culture (denoted **MORAL** and **TRAD**) = dummy variables for states with primarily Moralistic and Traditionalistic political cultures, respectively. States with primarily moralistic culture were coded as "1" for **MORAL** and "0" otherwise. States with primarily traditionalistic cultures were coded as "1" for **TRAD** and "0" otherwise.

Interaction of Competition and Turnover with Traditionalistic Culture. (denoted as **TRADINT**) = Party Competition \* Legislative Turnover \* Traditionalistic Culture.<sup>5</sup>

Interaction of Competition and Turnover with Moralistic Culture (denoted **MORALINT**) = Party Competition \* Legislative Turnover \* Moralistic Culture

<sup>3</sup> Ranney's method uses the percentage of the two party vote for governor received by each party in the election and the percentage of seats in each house of the legislature held by each party in each legislative session. Nebraska holds nonpartisan elections for a unicameral chamber so its measure is constructed from Gubernatorial results. The average popular vote of Democratic gubernatorial candidates, the average percentage of seats in the state House held by Democrats, the average percentage of seats in the state Senate held by democrats, and the percentage of terms for governor, senate, and house in which Democrats had control are all averaged together for each state over the designated period of time to provide the final measure of interparty competition.

<sup>4</sup> The logarithmic function of **COMPETE** was used to better fit the relationship between the independent variable and **SYSTEMIC**, which appeared slightly curvilinear.

<sup>5</sup> Note that in both interaction variables **COMPETITION**, not **LCOMPETE** is used. In this form, all of the values produced by the interaction term are positive numbers or zero.

**TABLE 2:**  
**Independent Variables Included in Analysis**

Name	Mean	Standard Deviation	Range
Income	17764.28	2776.77	12830 - 25395
Urban	0.6307	0.2172	0.2046 - 1.0000
Industrialization	0.9614	0.0282	0.8610 - 0.9920
Diversity	0.1614	0.1181	.0136 - .6665
Mean State SAT Score	947.46	63.96	834 - 1088
Log of Proportion of Students Taking SAT	-1.4542	0.9144	-3.2189 - -0.3011
Proportion of Students Taking SAT	0.3306	0.2381	0.04 - 0.74
Log of Party Competition	-0.5624	0.3194	-1.3863 - -0.1508
Party Competition	0.6804	0.2085	0.28 - 1.00
Legislative Turnover	0.2130	0.0635	0.0300 - 0.3440
Interaction: Competition * Turnover	0.1460	0.0622	0.0084 - 0.2979
Traditional Subculture	0.3200	0.4712	0 - 1
Moralistic Subculture	0.3400	0.4785	0 - 1
Interaction: Traditionalistic* Competition*Turnover	0.0326	0.0544	0 - 1872
Interaction (within Traditionalistic states)	0.1078	0.0465	0.0084 - 1872
Interaction: Moralistic* Competition*Turnover	0.0586	0.0876	0 - 0.2679
Interaction (within moralistic states)	0.1724	0.0512	0 - 0.2679

The determinants of systemic reform are analyzed on two levels. First, OLS regression indicates the specific relationships between each of the independent variables and systemic reform. Second, the joint impact of political variables and political culture variables are analyzed through

F-tests. Joint impact tests provide more reliable estimates of overall influence because of multicollinearity among the independent variables. This condition increases standard errors for individual parameter coefficients, though it leaves them unbiased. Thus, these variables will often appear insignificant even when the underlying relationship is strong. However, the F-tests avoid this shortcoming by analyzing the variances of collinear variables simultaneously. This test provides a more accurate indication of their overall impact, though it cannot produce individual coefficients. Nevertheless, confirming the significance of political and cultural variables, even as a whole category of variables, would depart from the findings of much of the policy determinants literature. Further, the data used in this study did not exhibit marked levels of heteroskedasticity when measured by the Goldfeldt-Quandt test, so the standard errors and  $R^2$ 's are reliable. The F-tests compare the full model (1) to two restricted models (2, 3, and 4) as follows:

1. 
$$\text{SYSTEMIC}_i = \beta_0 + \beta_1 \text{INCOME}_i + \beta_2 \text{URBAN}_i + \beta_3 \text{INDUS}_i + \beta_4 \text{DIVERSE}_i + \beta_5 \text{SAT}_i + \beta_6 \text{LPROP}_i + \beta_7 \text{LCOMPETE}_i + \beta_8 \text{TURNOVER}_i + \beta_9 \text{COMPTURN}_i + \beta_{10} \text{MORAL}_i + \beta_{11} \text{TRAD}_i + \beta_{12} \text{TRADINT}_i + \beta_{13} \text{MORALINT}_i + \varepsilon_i$$
2. 
$$\text{SYSTEMIC}_i = \beta_0 + \beta_1 \text{INCOME}_i + \beta_2 \text{URBAN}_i + \beta_3 \text{INDUS}_i + \beta_4 \text{SAT}_i + \beta_5 \text{LPROP}_i + \beta_6 \text{DIVERSE}_i + \varepsilon_i$$
3. 
$$\text{SYSTEMIC}_i = \beta_0 + \beta_1 \text{INCOME}_i + \beta_2 \text{URBAN}_i + \beta_3 \text{INDUS}_i + \beta_4 \text{SAT}_i + \beta_5 \text{LPROP}_i + \beta_6 \text{DIVERSE}_i + \beta_9 \text{TRAD}_i + \beta_{10} \text{MORAL}_i + \varepsilon_i$$
4. 
$$\text{SYSTEMIC}_i = \beta_0 + \beta_1 \text{INCOME}_i + \beta_2 \text{URBAN}_i + \beta_3 \text{INDUS}_i + \beta_4 \text{SAT}_i + \beta_5 \text{LPROP}_i + \beta_6 \text{DIVERSE}_i + \beta_7 \text{LCOMPETE}_i + \beta_8 \text{TURNOVER}_i + \varepsilon_i$$

Equation 2 measures the joint impact of all political and cultural variables, consisting of LCOMPETE, TURNOVER, COMPTURN, TRAD, MORAL, TRADINT, and MORALINT together, testing the null hypothesis  $H_0: \beta_7 = \beta_8 = \beta_9 = \beta_{10} = \beta_{11} = \beta_{12} = \beta_{13} = 0$ . Equation 3 examines the impact of the political variables TURNOVER, LCOMPETE, COMPTURN, TRADINT, and MORALINT, which tests  $H_0: \beta_7 = \beta_8 = \beta_{11} = \beta_{12} = \beta_{13} = 0$ . Finally, equation 4 analyzes the impact of the political culture variables TRAD, MORAL, TRADINT, and MORALINT through the null hypothesis  $H_0: \beta_{10} = \beta_{11} = \beta_{12} = \beta_{13} = 0$ . The statistic for the F-test of the null hypotheses is:

$$F = \frac{(R^2_{UR} - R^2_R)/q}{(1 - R^2_{UR})(N - k)}$$

$R^2_{UR}$  is the  $R^2$  of the unrestricted equation;  $R^2_R$  is the  $R^2$  of the restricted equation;  $q$  is the number of variables omitted from the unrestricted model due to the null hypothesis;  $N$  is the number of observations, and  $k$  is the number of variables including the constant term in the unrestricted model. The test statistic will have an F distribution with  $q$  degrees of freedom in the numerator and  $N - k$  in the denominator.

TABLE 3:  
Estimates of the Regression Models

	Equation 1	Equation 2	Equation 3	Equation 4
Intercept	-18.0290 (19.8169)	-15.9300 (21.5569)	-16.6682 (21.6163)	-13.0301 (21.4041)
Income	0.0006* (0.0002)	0.0002 (0.0002)	0.0004 (0.0002)	0.0003 (0.0002)
Urban	-6.2538** (1.9999)	-2.1924 (1.8852)	-2.4182 (1.9022)	-3.7822 (2.0665)
Indus	36.2571* (15.4403)	31.7001 (15.7550)	30.9570 (16.9351)	30.7429 (15.6327)
Diverse	-2.0362 (2.9539)	1.8093 (2.6132)	1.2831 (3.0412)	0.2794 (3.0504)
SAT	-0.0218 (0.0182)	-0.0145 (0.0157)	-0.0168 (0.0174)	-0.0155 (0.0159)
Lprop	-1.7867 (1.5418)	-1.1402 (1.2535)	-1.3800 (1.3995)	-1.2345 (1.2727)
Lcompete	-8.5498 (4.7637)			2.1572 (3.2155)
Turnover	-43.9997 (22.1526)			11.8710 (14.5974)
Compturn	32.8400 (26.5857)			
Trad	-6.8521* (2.9049)		1.1954 (0.9467)	
Moral	2.7363 (2.1030)		0.7808 (0.8785)	
Tradint	65.1942** (22.1142)			
Moralint	-10.3184 (12.9623)			
R2	0.5186	0.2447	0.2782	0.3346
Prob>F	0.0077	0.0610	0.0914	0.0515

### Results of Hypothesis Tests for Joint Impact

The  $R^2$ 's of the four equations were used to generate F-tests to compare the three restricted models, equations 2, 3, and 4, with the unrestricted model, equation 1. The first test (equation 2) examined the joint impact of the political and political cultural variables together to find whether the socioeconomic variables could explain the model without the former factors. The F-test of all these variables, compared to the complete model, produced a F-value of 2.7643 with 7 and 34 degrees of freedom. This result has a probability value of 0.0219, thus indicating rejection of the null hypothesis. The test of the political variables (equation 3) produced an F-value of 3.39 with 5 and 34 degrees of freedom. The probability of achieving this result by chance is 0.0135. Thus, the null hypothesis of no effect from the political variables should also be

rejected. The political culture variables (equation 4) produced similar results. An F-value of 3.25 with 4 and 34 degrees of freedom has a probability of 0.0232, which calls for rejection of the null hypothesis. The sum result of the joint impact tests confirms that political variables and political culture both have significant impacts upon state education policy independent of socioeconomic variables. Further, these two categories are significant individually as well as in conjunction.

### Results of OLS Regression

The figures from the OLS regression using equation 1 (see Table 3) largely confirm the expectations for the overall model but with some unexpected results. The three socioeconomic variables often used in state policy studies, INCOME, URBAN, and INDUS, were all significant influences upon systemic reform, but URBAN was in the opposite direction predicted. The standardized coefficients reveal that income had the most overall impact (0.8322), industrialization had the least (0.5103), and urban was in the middle (-0.6586). This strong negative coefficient for urban (with a probability value of .0036) was particularly curious given the positive expectation. Results for the other socioeconomic and contextual variables failed to achieve significance. The coefficient for DIVERSE was negative, as predicted. The two variables used to measure achievement scores, SAT and LPROP, both produced negative coefficients. They should have shown coefficients of opposite signs, but these results were both insignificant.

The results from the political variables performed as expected with the exception of COMPTURN. Both LCOMPETE and TURNOVER were negatively associated with the dependent variable, but narrowly failed to achieve statistical significance. LCOMPETE showed a probability value of 0.0816, while TURNOVER barely failed to reach significance at 0.0551. COMPTURN unexpectedly produced a strong positive standardized coefficient of 0.9449 but failed to reach significance with a probability value of 0.2252. However, multicollinearity among all three of these variables as well as with the interaction terms MORALINT and TRADINT inflated the standard errors for these variables, and may have been responsible for their lack of significance. An F-test carried out on the joint impact of TURNOVER and COMPTURN produced a probability value of 0.0286. The significant joint impact of these two variables is striking since neither of them is significant individually. Such a result is a classic sign of multicollinearity and demonstrates how the variables have inflated standard errors. Similar evidence suggests that LCOMPETE suffers from inflated standard errors as well. An F-test reveal that its joint impact with COMPTURN is much more significant than either individual coefficient, again suggesting multicollinearity. However, this joint impact barely fails to reach significance with a probability of 0.0514, so the individual significance of LCOMPETE remains inconclusive. The standardized estimates reveal standardized impacts, -1.2693 for LCOMPETE and -1.2666 for TURNOVER, that are stronger than the effects of the significant socioeconomic variables. The somewhat smaller impact of COMPTURN (0.9449) is also stronger than any of the socioeconomic variables.

Political culture variables behaved as predicted in their direct effects upon SYSTEMIC, but the interaction effects produced surprisingly results. TRAD produced a negative coefficient and was statistically significant at 0.0242 probability. MORAL had a positive coefficient, as predicted, but failed to reach significance with a 0.2020 probability. An F-test of the joint impact of MORAL and MORALINT also failed to reach significance with a probability of 0.2882. The impact of MORAL's standardized coefficient was moderate at 0.6385, similar to that of the

significant socioeconomic variables. By contrast, TRAD showed a particularly strong standardized coefficient of  $-1.5721$ , which is the second largest in the model. Further, the standardized estimates for these two dummy variables understate their overall impact on the model. The figures represent how many standard deviations the dependent variable changes for every standard deviation shift in the independent variable, but the dummy variable can only take on the values of zero or one. Therefore, the nonstandardized coefficients provide more meaningful and interpretable figures in this case. The coefficients for TRAD and MORAL each represent how many points SYSTEMIC shifts, on average, on a scale of 0 to 9 within each political culture. Thus, since TRAD has a coefficient of  $-6.8521$ , the level of systemic reform found in traditionalistic cultures almost seven points lower than in individualistic cultures, on average, when controlling for the other independent variables. In standardized terms, systemic reform drops over 3 standard deviations ( $3.3561$  to be exact) in traditionalistic cultures when compared to individualistic ones. This result appears much stronger than the standardized coefficient of  $-1.5721$  for TRAD. These results demonstrate some of the most powerful effects of the model.

The interactions of the political variables with traditionalistic and moralistic political cultures produced contrasting results, as predicted, but in the opposite direction expected. TRADINT had a highly significant, positive coefficient (p-value of  $.0057$ ) and a standardized estimate that, at first glance, appears to be the most powerful influence upon the dependent variable in the model at  $1.7637$ . However, this large standardized coefficient may be skewed by the dummy variable included in the interaction term, as explained earlier. When the impact of this term is examined just within the traditionalistic states (It has no impact on the others since the variable TRAD would be coded "0.") the impact is still large with a standardized coefficient of  $1.16$ , but not the most influential factor in the model.

MORALINT produced a negative coefficient but failed to achieve significance with a probability of  $0.4315$ . It showed a moderate standardized coefficient of  $0.4315$ . However, this interaction terms is inherently correlated with the variables that form its components. Therefore, multicollinearity may be inflating the standard error term. The joint impact of the variables COMTURN, LCOMPETE, TURNOVER, and MORALINT, produced a probability of  $0.0208$  in an F-test. However, this result is inconclusive because both LCOMPETE and TURNOVER are most likely significant terms themselves. An F-test of just COMTURN and MORALINT was not significant

TABLE 4:  
OLS Analysis of Determinants of Systemic Reform

Variables	Coefficient	Standardized Coefficient	Prob. Value
Intercept	-18.0290 (19.8169)	0.0000	0.3693
Income	0.0006* (0.0002)	0.8322	0.0136
Urban	-6.2538** (1.9999)	-0.6586	0.0036
Indus	36.2571* (15.4403)	0.5103	0.0248
Diverse	-2.0362 (2.9539)	-0.1164	0.4953
SAT	-0.0218 (0.0182)	-0.6937	0.2389
Lprop	-1.7867 (1.5418)	-0.7795	0.2546
Lcompete	-8.5498 (4.7637)	-1.2693	0.0816
Turnover	-43.9997 (22.1526)	-1.2660	0.0551
Compturn	32.8400 (26.5857)	0.9449	0.2252
Trad	-6.8521* (2.9049)	-1.5721	0.0242
Moral	2.7363 (2.1030)	0.6385	0.2020
Tradint	65.1941** (22.1142)	1.7637	0.0057
Moralint	-10.3184 (12.9623)	-0.4295	0.4315
R <sup>2</sup>	0.5186		
Prob>F	0.0077**		

( ) = Standard errors

\* p < .05; \*\* p < .01

## Discussion

The strong influence of political forces upon systemic education reform in the states appears striking in light of how many previous studies have shown such variables to be insignificant. Though some researchers have discovered political effects upon state policy, these influences have largely consisted of ideological values held by the public (Lowery, Gray, and Hager 1989; Wright, Erikson, and McIver 1985; Erikson, Wright, and McIver 1993) and voter turnout (Lowery, Gray, and Hager 1989). However, these factors played no role in this study. The joint impact hypothesis tests confirm this influence for both the political variables (LCOMPETE, TURNOVER, COMPTURN) and political culture (TRAD and MORAL). These results comprise a marked departure from previous findings in the state policy literature. Further, the effects of the political variables reversed within traditionalistic culture. This result, combined with traditionalistic culture's strong coefficient, provided a startling impact upon the model.

The overall fit appeared to support the study's general premises, but some surprising results also occurred. The model consists of three basic components: the socioeconomic and contextual variables, the political variables, and the political culture variables. The socioeconomic variables INCOME and INDUS confirmed the results obtained in previous studies on state policy and innovation. Higher levels of each variable are expected to increase state propensity to enact new policies and pass welfare provisions. Urbanization, unexpectedly, produced a strong negative coefficient. This variable has previously been associated with increases in public demand for more social welfare policies or other government services, although it had been found to decrease state education spending levels (Hwang and Grey 1990). Thus, there was no clearly anticipated direction for this variable. Its standardized coefficient of  $-0.6586$  had almost as much net impact upon the dependent variable as INCOME. The reasons behind this result might be explained by the particularly troubled condition of urban education and how the politics of that environment interacts with systemic reform. Though suburban and rural schools are not trouble free by any measure, the problems of urban centers have proved particularly difficult to overcome.

Schools in areas with high concentrations of poverty and other social problems may not have the resources or ability to successfully demand high standards from their students. One danger of enacting systemic reform is that two tiers of standards might be created, one for disadvantaged children and one for the advantaged. Such a situation could lead to better off schools far outpacing those with more disadvantaged students. This process could widen the already large gap in achievement between schools, districts, and even states. Some advocates call for some guarantee that new, ambitious standards would not simply reinforce a system that favors the better-off at the expense of needy. In order to assuage these concerns, the Goals 2000 legislation incorporates provisions concerning "opportunity to learn" standards, which would guarantee a minimum level of opportunity for students to achieve new standards. However, these standards have not been fully developed, much less set in place. Thus, standards present a threat of sorts to groups that do not anticipate significant benefits from the reforms. The measures of state income and educational achievement may not accurately control for the perceived threat of systemic reform to disadvantaged groups, as intended in the model. The two control measures only record state averages. However, the problems in city school systems could be quite acute and still not be strongly reflected in state averages. Concern over these problems could translate into greater attention to issues such as systemic reform. These concerns may lead states with larger proportions of urban areas to oppose systemic reform more strongly than is captured by the

control variables. Therefore, higher levels of urbanization may be associated with lower levels of systemic reform because of opposition or other concerns raised by those representing the concerns of these urban areas.

The political and cultural variables cannot be analyzed separately because of the complicated interaction effects between them. The combination of political variables and their interaction with political cultural variables produced overall impacts that differed by political culture. TURNOVER and COMPETE, when their effects are aggregated with the interaction terms, both inhibit systemic education reform within individualistic and moralistic states, while they promote reform within traditionalistic states (see Table 5). These results demonstrate a strong and unique effect upon politics and policy that occurs in traditionalistic states. The political culture variables behaved as predicted, individually. Traditional culture, associated with reluctance to innovate and enact new policies, produced a strong, significant, and negative coefficient. Moralistic culture, positively associated with innovation, produced a moderate and positive coefficient which failed to reach statistical significance. The political variables, individually, also behaved as expected. The results for these two variables cannot be examined separately, however. The interaction of TURNOVER and LCOMPETE with one another and the political culture variables both produced strong negative coefficients. However, neither of the two attained statistical significance, though TURNOVER barely failed at 0.0551. Like the measures of political culture, these variables suffered from multicollinearity, and an F-test reveals that the two measures are jointly significant. This joint result confirms the importance of political factors to this particular policy, a finding that belies much of the policy determinants literature. Further, these variables have the opposite effect as in the innovation literature, inhibiting new policies instead of promoting them.

**Table 5:**  
**Change in Systemic Reform from Competition and Turnover<sup>6</sup>**

	Individualistic	Traditionalistic	Moralistic
Change in Systemic from one standard deviation increase in TURNOVER	-1.4969	2.8167	-1.8555
Change in Systemic from one standard deviation increase in COMPETE <sup>7</sup>	-1.3218	1.5729	-1.7800

<sup>6</sup> Consists of net changes in systemic reform (on a scale of 0 to 8) predicted from changes in turnover and competition. These figures represent impacts from LCOMPETE, TURNOVER, COMPTURN, MORALINT, and TRADINT.

<sup>7</sup> This measure assumes a one standard deviation change in LCOMPETE at the same time.

The unexpected results become evident when the three interaction variables, COMPTURN, TRADINT, and MORALINT are included. These variables produced coefficients that were in the opposite direction anticipated. COMPTURN had a strong standardized coefficient of 0.9449 though this result did not reach statistical significance. This interaction effects partially counters the effects of its individual components upon systemic reform. The interactions with the two cultures show widely differing results for traditionalistic and moralistic cultures. TRADINT shows a very strong, positive, and significant coefficient. In fact, the standardized result is the strongest impact in the model. Again, the dummy variable TRAD makes this standardized coefficient difficult to interpret. Instead, the unstandardized figure proves more meaningful. This value of 65.1941 represents the addition to the slope of COMPTURN (which is competition \* turnover) that occurs within traditionalistic states. This value roughly comprises a tripling of COMPTURN's coefficient of 32.8400. The opposite result occurred with the interaction term involving moralistic culture. MORALINT produced a moderate, negative coefficient that failed to reach statistical significance.

When the political, cultural, and interaction variables and their impacts are combined, the total effect can be estimated from the model's predictions. While reform decreases with competition and turnover within moralistic and individualistic cultures, anticipated, the level of reform surprisingly increases with competition and turnover in traditionalistic cultures. Thus, a completely different relationship exists between the political variables and reform within traditionalistic cultures. Why should competition and turnover increase innovation in this culture but not the others? The reason may lie in traditionalistic cultures' reluctance to innovate. As stated previously, this type of culture views the role of government as maintaining the existing order and defines political activity as an elitist process (Elazar 1984). Thus, these states resist innovation because it may challenge the political order and elites are not as responsive to public opinion and demand. First, this model confirms that trend and finds a very powerful resistance to education reform in traditionalistic cultures, confirmed by TRAD's coefficient. Second, increased competition and turnover are thought to bring representatives closer to the public in order to secure their electoral positions. The key to the unexpected interaction between culture and politics may come from the relationship between public opinion and legislative opinion on the need for reform. This study noted that legislatures formulate much of education policy with limited input from the public. Though states' decisions to innovate certainly follow the public's demand that lawmakers "do something" about education, the form that this action takes is determined by the lawmakers themselves. Thus, as previously suggested, competition and turnout can inhibit innovation in this case by injecting controversy and multiple decision makers into the process. However, traditionalistic states may be insulated from the public enough to resist public pressure for any change. Thus, traditionalistic states may resist calls for reform from the public. Therefore, the increased attention to public opinion that follows high competition and turnover may spur legislators in traditionalistic states to enact the reforms that they otherwise resisted. This interaction would explain why competition and turnover promote systemic reform in traditionalistic states. By contrast, states that are already disposed to enact innovations do not need heightened levels of competition and turnover to spur them to enact reforms. Such conditions may cause the process become bogged down in disagreement when competition and turnover increase responsiveness to the public, as previously suggested. These conclusions

explain the results obtained in the model, but require more descriptive accounts of decision making contexts to demonstrate that such a processes occur

### Conclusion

This study has examined state determinants of systemic education reform. The evidence demonstrates that socioeconomic, political, and cultural variables all play an important roles in this process. Systemic education reform is conceptualized as the degree to which four conditions have been implemented in the states: curriculum development, performance standards, student assessment, and district monitoring. Unlike other models of policy innovation, the political factors partisanship, public opinion, and turnover were not thought to have direct effects upon policy adoption in the states. Instead, partisan competition and legislative turnout influence the process but in the opposite manner of that presented in other studies. Instead of increasing policy innovation, these two factors should decrease reform by injecting controversy and additional players into the policy making process, which would deter legislative innovation. Finally, political culture should influence policy adoption. Moralistic culture is associated with more innovation and traditionalistic culture with less innovation.

The study tested the effects of socioeconomic, political, and cultural variables in two ways. Multiple regression analysis provided the slopes for each variable's effect on the total equation. Then, multiple equations were analyzed with F-tests. These latter tests demonstrated the significance of the political, cultural, and socioeconomic variables as whole categories. The OLS analysis produced coefficients that generally conformed to expectations, but, in which, two interesting effects also occurred. First, the slope for urbanization was significantly negative. This result, though it is not without precedent, contradicts the findings of other innovation studies and may be caused by the perception of systemic education reform as a potential threat to inner city schools and students. Second, the political variables partisan competition and legislative turnover reduced state adoption of systemic reform in moralistic and individualistic culture, as expected. This result, on its own, proves interesting because these variables have previously been associated with higher levels of innovation, not lower. Further, these two variables produce completely different directional effects within traditionalistic cultures. Thus, the same political factors lead to increased reform in traditionalistic cultures. This positive effect of turnover and competition upon systemic reform seems to challenge the distance of traditionalistic political elites from public opinion and their reluctance to enact new policies. The instability that these factors cause leads traditionalistic states to follow public demand more closely and, in this case, promote school reform in order to address public concern over educational quality.

Overall the model confirms the importance of all three types of variables in determining state education policy. This conclusion rejects the exclusive primacy of socioeconomic variables over policy outputs. Though it embraces the importance of political and cultural variables, the relationships prove different from other studies of these types of variables. Competition and turnover, rather than uniformly supporting innovation, can also inhibit it. Further, this relationship varies depending upon the political culture. The conclusions of this study stem from an examination of a single policy type which cannot be generalized to apply to other aspects of education or other areas of state policy. A more detailed examination of policy making of systemic reform would be necessary to confirm these results. Nevertheless, this study confirms

the importance of politics in state level policy making, which, though not a startling conclusion, is a surprisingly rare one in the literature.

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