

**Representation and Local Policy:  
Relating County-Level Public Opinion to Policy Outputs**

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### **Abstract**

Students of local politics have argued that American federalism implies little for local tastes in subnational policy making. Peterson (1979) is most closely associated with the expectation that the need for a productive tax base will drive down social service spending at the local level, while promoting developmental expenditures. In this research we create and audit a reliable measure of county political ideology and investigate the role public opinion plays in redistributive, developmental, and allocational public spending choices at the county level in California. Our findings challenge previous assumptions connected to local policy making that suggests that local governments should be uniformly biased against redistributive policies. Instead we find that redistributive spending varies across local governments as a function of local ideological orientations. More liberal/conservative counties produce more liberal/conservative policy outputs across a wide range of redistributive policy areas including public health and welfare services. Importantly, on issues that bring higher levels of political conflict – like redistributive policies – local policy outputs match the political interests of diverse, localized populations. Our findings highlight the multi-level nesting within which policy making occurs in the U.S. and also recommends the continuing importance of examining the local origins of public policy.

## **Representation and Local Policy: Relating County-Level Public Opinion to Policy Outputs**

Scholars of comparative state politics have long been interested in the extent to which the public policies of state governments reflect mass public opinion in the states (Morehouse 1973; Weber and Shaffer 1972). Erikson, Wright, and McIver (1993) and others have established an association between states' general political attitudes and the choices of state policy makers. We extend the investigation of subnational opinion-policy linkages by examining how local public opinion shapes policy within states. To what extent does localized public opinion influence local-level policy-making? We argue that local public opinion should have a much greater influence on local governments' policy choices than is often presumed. In order to test this expectation, we follow methods employed at the state level to create a reliable and stable measure of local ideology by aggregating statewide California Field surveys (1990-1999) to the county level and test the relationship between local political orientations and a broad range of policy outputs at the county level.

We find counties' spending levels for redistributive programs varies as a function of county ideology. These results challenge previous theoretically derived expectations that local governments are predisposed against redistributive policies and that local economic needs are the primary driving force behind policy choices made at the local level. By contrast, our findings support the view that there is a meaningful local politics, despite the substantial hemming-in of local choice by mandates, constitutions, and resource constraints.

## **Local Policy Making as “Limited Politics”**

Peterson’s (1979, 1981) seminal examination of city policy making argues local governments’ policy choices are confined by the structural constraints of U.S. federalism, and as a result, local politics is best characterized as a “limited politics,” where local governments policy agendas are relatively narrow, with an almost exclusive focus on enacting policies aimed at improving economic growth (Peterson, 1981). In his account, there is little room for the representation of local interests given the economic imperatives that limit local policy makers.

Peterson’s (1981) primary argument that local governments’ main goal is set on delivering economic growth policies has shaped the expectations many scholars have about the local policy making process. First, local governments, according to the “city limits” framework, tend to shy away from policies that could potentially hurt communities’ economic standing, which works to create an economic bias against redistributive policies. Second, local governments’ pursuit of economic growth policies is assumed to be politically popular, and because of this, there is generally less political conflict at the local level. Overall, Peterson (1981) claims that because local governments are less likely to play an active role in areas of policy where political conflict is high, and more likely to adopt and implement policies where political conflict is low, local political forces like public opinion and partisanship should be unrelated to local policy making at the local level. Instead, Peterson (1981) views local governments in a quasi-competition for economic activity and investment which enhances local taxes bases that pay for valued local services. Because of this, economic considerations are more likely to drive policy choices at the local level (Peterson, 1981).

Peterson (1981: 41-42) divides public policy into three primary categories including developmental, allocation, and redistributive policies. Developmental policies work to enhance

the local tax base and generate additional resources that can be used to help the welfare of the city. Allocational policies include simple housekeeping functions like street sweeping, garbage collection, community policing and fire protection, that together have economically neutral effects but work to better the community. It is these two policy areas that local governments are most likely to be involved and because of their political popularity, political conflict tends to be low. Finally, redistributive policies refer to those policies that redistribute wealth from those who are better off to those who are worse off. In contrast to developmental and allocational policies, these policies have a relatively high degree of political conflict because of their harmful nature to the local economy. As a result, Peterson (1981) argues local governments have an anti-redistributive bias and for rational economic reasons, local governments are less likely to adopt redistributive policy as it hurts economic growth and may attract a greater amount of impoverished people.

### **Reconsidering the Role of Local Public Opinion in Local Policy Decisions**

Although Peterson focused more explicitly on cities, the idea that counties, our main focus here, have little room to shape policies that reflect local circumstances and local politics is consistent with a “county limits” variation on the Peterson theme. Indeed, the Peterson theme regarding externally imposed limits has also been applied to the study of interstate policy variation (Sung-Don and Gray, 1991). From this view, since local governments are obsessed with developmental and allocational policies, which tend to produce little contentiousness, there ought to be little role for opinion or ideological preferences in shaping policy choice. Alternatively, our claim is that a combination of increasing urbanization among local governments, changing institutional relationships between state and local governments, and the

changing nature of policies adopted and implemented by local governments, increases the likelihood that local ideology may have a significant impact on local policy processes and the policy choices that elected officials make.

As many counties have become increasingly urbanized the demand for city-like services has also increased. In response, the breadth of services offered by county governments has grown since the early 1980s (Benton and Rigos, 1985; Schneider and Park, 1989; Cigler, 1990; Benton, 2002; 2003; DeSantis and Renner, 1994). Overall, research shows counties have expanded their services from the more traditional services like property tax assessment, law enforcement, and elections to other additional services including health care, educational services, pollution control, and mass transit among others (Degrove and Lawrence 1977; Duncombe 1977; Benton, 2002; 2003). Ideological divisions often characterize many of these “new” policies being adopted and implemented at the county level. Moreover, in order to carry out increasingly complex functions, state governments have tended to increase the amount of policy discretion and hence decision making authority to county governments (Bowman and Kearney, 1986; Martin and Nyhan, 1994).

The ideological disposition of county residents could be linked to public policy in several ways. Street-level bureaucrats in counties with distinct ideological profiles, for example, might be more likely or feel more compelled to implement policies in ways that closely reflect the prevailing ideological preferences (Lipsky, 1980). Of course, the staff and leadership of local agencies might also be recruited in ways that reflect the views of the local legislature (Board of County Supervisors, School Boards, or City Councils). In addition, local elected officials (e.g. County Boards of Supervisors), to the extent that re-election is on their minds, are likely to try to adopt policies that reflect or are consistent with the ideological preferences of their constituents.

In short, as counties become involved in such controversial or divisive issues as managing growth, implementing controversial programs in such areas as welfare, parolees, homelessness, and health care for the poor, it is plausible to expect that the ideological inclinations of the local population will play a role.

### **Expectations**

Our general expectation is that counties' ideological make-up will be related to policy outputs at the county level. However, we expect this relationship will vary across issue types. Local political orientations should affect redistributive policies rather than those policies considered to be developmental or allocational in nature (Wong, 1988). Social welfare programs tend to divide people by ideology: Traditionally, conservatives push for more restrictive welfare policies whereas liberals push for greater benefits with fewer restrictions (Rom, 1999). Empirical research at the state level has found greater welfare spending among states with more liberal publics and political elites (Erikson, Wright, McIver, 1993; Hill, Leighly, and Hinton-Andersson, 1995). Following this, we expect more liberal counties to have greater welfare spending. Similarly, we expect more liberal counties to have greater funding for other redistributive programs, like those funded in the public health domain, reflecting liberals' traditional support for a more active governmental role in the health care process. Because allocational and developmental policies are generally associated with lower levels of political conflict, we expect ideology to have little or no effect in these areas.

## **Measuring Political Orientations at the Local Level in California**

Students of representation have demonstrated the influence of public opinion on national policy outputs (Wlezien, 1995, 1996; Stimson, MacKuen, and Erikson, 1996). Scholars have also found clear associations between state policy decisions and the general political orientations and more specific public demands of state residents. (Erikson, Wright, and McIver, 1993; Hill and Hinton-Andersson, 1995; Hill and Leighley, 1996; Norrander, 2000; Johnson, Brace, and Arceneaux, 2005). Early research on representation focused on the local basis for congressional voting, identifying the influence of public opinion on the voting behavior of members of Congress (Achen, 1978; Erikson 1978; Miller and Stokes, 1963).

In contrast however, little work has systematically investigated policy responsiveness to public opinion on local politics. Earlier attempts at measuring shared beliefs among communities have led to concepts such as local “political culture” or “political ethos” (see Banfield and Wilson, 1963; Eulau, 1973). Although there were efforts to measure political culture or the “ethos” of local residents, these studies involved only indirect indicators of voters’ views (Hawkins, 1971). In more recent work, scholars have used innovative simulation techniques to study democratic responsiveness in U.S. school systems (Berkman and Plutzer, 2005). These measures rely on the assumptions built into simulations and it is difficult to ascertain the extent to which they are representative.

We measure local political ideology using methods similar to those of Erikson, Wright and McIver (1993). This work significantly advanced the understanding of state-level public opinion by creating reliable and valid measures of political ideology and partisanship by pooling 1976-1988 nationally sampled CBS/*New York Times* polls and re-aggregating them to the state

level. We use a similar approach, re-aggregating to the county-level statewide California Field Poll surveys conducted between 1990-1999.<sup>1</sup>

Established in 1947, and continuing every year since, the Field Poll routinely fields surveys questions to California residents on a wide range of public policy issues and questions regarding their support for various political candidates and the national, state and local levels of government.<sup>2</sup> Data were gathered from 48 Field Poll surveys totaling 51,930 individual respondents. The Field Poll consistently asks respondents to place themselves along a 3-point political ideology continuum. Specifically, respondents were asked, “do you consider yourself to be politically conservative, liberal, middle-of-the road, or don’t you think of yourself in this way.” Conservatives were coded 100, middle-of-the-road 0, and liberals –100. In addition, the Field Poll asks each respondent his or her county of residence, allowing us to link each response

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<sup>1</sup> Cohen (2006:6-10) describes a variety of alternatives to measuring state public opinion using pooled national sample surveys. In principle, these alternatives are also feasible for measuring county-level public opinion. These alternatives include pooling surveys with sub-unit samples (Jones and Norrander 1996), combining independent surveys taken within comparable subnational geographic units (Beyle, Niemi, Sigelman 2002) and simulating public opinion using survey data or other political information (Park, Bafumi, and Gelman 2003, Berry, Ringquist, Fording, and Hanson 1998, Weber, Hopkins, Mezey, and Munger 1972-1973). Given the absence of California surveys with comparable county-level sub-unit samples or any comparable independent surveys of California counties, we are unable to pursue two of these alternatives. Simulating county-level public opinion is a reasonable alternative (see, Berkman and Plutzer 2005), but these techniques generally rely on extensive assumptions about connections between individual demographic attributes and opinions. We make different assumptions, namely that the coverage of county residents in these pooled statewide samples of California allows us to capture a meaningful county-level measure of public opinion. Scholars who simulate public opinion measures share our assumptions about forming public opinion from the aggregation of individual opinions. In sum, the simulation of public opinion is complementary to the approach we take, but not clearly preferable.

<sup>2</sup> The Field Poll uses samples of the California telephone household population drawn from random digit dial (RDD) samples of Survey Sampling Incorporated. The sample is a stratified sample of California counties where samples are systematically stratified to all counties in proportion to each county’s share of telephone households in the survey area. Further sampling information can be referenced from the California Field Poll Code Books 1990-1999.

to a given county. Individual responses were then aggregated to create ideological scores for California's 58 counties. The number of cases in each county ranged from 10,326 in Los Angeles county to 14 in Sierra and Trinity counties (mean=659.01). Ideology scores ranged from the most conservative Sierra county (50.00) to the most liberal San Francisco county (-25.35) with a mean=21.28. We list ideology scores and sample sizes for each of the 58 counties in Table 1.

[Place Table 1 About Here]

### Auditing the county-level measure of ideology

Individual responses are treated here as aggregate data, and therefore it is not appropriate to use standard measures of individual-level reliability like Cronbach's alpha (Brace et al., 2002). Because of this, Jones and Norrander (1996) recommend testing reliability analysis on the basis of aggregate units, and not individuals. To first test the generalizability of the ideology measure, we use the O'Brien coefficient (O'Brien, 1990). Presented by Jones and Norrander (1996), the O'Brien generalizability test seeks compares within-unit variance to the across-unit variance while taking into account sample size (Norrander, 2001: 113).<sup>3</sup> Measures of ideology will be more generalizable across units with less intra-county variation and more variation in ideological dispositions inter-county. An O'Brien generalizability coefficient that exceeds .70 is considered to be highly generalizable, and values between .60 and .70 are considered to be moderately generalizable. The O'Brien coefficient for the county-level ideology measure is .96.

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<sup>3</sup> O'Brien's (1990) generalizability coefficient for the R:A Design contemplates the mean square, an estimate of the population variance between aggregate units, MS(a), and the mean square for individual-level scores within the aggregated units, MS(r:a), using the formula:

$$E\hat{\rho}^2 = \frac{[MS(a) - MS(r:a)]}{MS(a)}$$

MS(a) and MS(r:a) were estimated using the One-Way ANOVA procedure in SPSS.

An additional test of reliability is the split-half approach used by Erikson, Wright, and McIver (1993). The split-half approach involves splitting the Field Poll sample into two subsets by assigning odd-year surveys to one subset and even years to the other. Mean scores for county ideology were calculated for each subset and correlated using Pearson's  $r$  coefficients. The Spearman-Brown prophecy formula was used to assess the reliability of each measure:

$$\frac{2r_{12}}{1 + r_{12}}$$

where  $r_{12}$  = the Pearson's  $r$  correlation between the split-halves. Reliability scores of .70 and above are considered reliable and those between .60 and .70 are considered moderately reliable, and those below .60 are considered unreliable (Jones and Norrande, 1996). The Spearman-Brown coefficient for the reliability of the county-level ideology measure equals .60

To test the stability of the measure, the Field Poll sample was divided into "early" and "late" subsets. The early subset included survey years between 1990-1995 and the late subset 1996-1999. Mean scores for county ideology were calculated and correlated. The Spearman-Brown coefficient for the stability of county-level ideology was .62, close to what is considered the minimum reliability level. In sum, the assessment of the reliability of the ideology measure is mixed. The O'Brien measure is highly reliable although the Spearman-Brown coefficients using the split-half approach is at the low end of scores considered to be "moderately" reliable. We have chosen to use the ideology measure here, but at the same time make note of its possible deficiencies, which in the analysis would likely tend to attenuate findings.

#### How well do Field Poll-based measures represent county-level California demographics?

California counties are not the population of interest for the Field Poll, and thus we cannot assume that the sampling frame employed by that organization produces representative

estimates of county population. As noted by Hill and Hurley (1984), a sample bias might be introduced when creating a nonrandom sample from state residents. To test the validity of the Field Poll sample a series of demographic characteristics were derived from the Field Poll sample and correlated with county demographic characteristics collected by the U.S. Census (see Brace et al., 2002). Results presented in Table 2 show that county samples obtained from the Field Poll are substantially representative. Specifically, we find a strong correlation between the educational attainment of the sample and educational attainment reported by the U.S. Census in 1990 and 2000 (U.S. Census Bureau). A similarly strong relationship is found among between the income of Field Poll respondents and U.S. Census statistics. Racial characteristics of respondents, although showing a slightly weaker correlation to U.S. Census figures than do the education and income figures, are moderately strong nonetheless. Importantly, the strong correlations for education and income, and the moderately strong correlations for the race variables suggest that the Field Poll samples adequately reflect county populations.

[Table 2 about here]

### **Ideology and Local Policy Outputs in California**

In order to examine the relationship between policy and the ideological disposition of California counties, we use data from California's Office of the Controller on county-level spending across six policy areas: public assistance, health and sanitation, public ways and facilities, education, public protection, and general governmental expenditures. These measures are the study's dependent variables. The policy measures describe a number of different policy areas – redistributive policies (public assistance, health and sanitation), developmental spending (public ways and facilities, education), and allocational expenditures (public protection and

general governmental spending). We use these policy categories for two primary purposes. First, these are all policy areas in which county governments are actively involved with regard to policy formulation and implementation. Second, they allow us to employ Peterson's issue typology to explore the relationship of ideology with policy outputs across a substantively wide range of issues. Following Peterson (1981), each of these policy areas are likely associated with different degrees of political conflict, depending on whether it manifests primarily a redistributive, developmental, or allocational dynamic.

We expect the influence of ideological dispositions on policy making at the county-level to vary across policy issues. Policies associated with welfare payments and public health are considered by Peterson (1981) as redistributive policies, and as noted above, these policies often raise issues that are ideologically divisive and more likely to elicit support or opposition along ideological lines. In contrast, allocational and developmental policies are less likely to engender political conflict and therefore we might expect ideology to matter less with respect to these and other allocational and developmental policies.

### Policy Indicators

The Office of the State Controller in California releases an annual report on county revenues and expenditures. We draw our policy indicators from this report.<sup>4</sup> We identify six areas of public expenditures (Connell, 2001), two in each of Peterson's issue typology. For allocational policies, we use general government expenditures, which includes budget items from day-to-day county administration (e.g., legislative and administrative expenses, finance, counsel, personnel, elections, property management, etc.), and public protection (e.g., judicial services,

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<sup>4</sup> The definitions of the budget items providing the policy indicators are discussed in an appendix to the State of California Counties Annual Report (Connell, 2001), pp. 145-147.

police protection, detention and correction, fire protection, etc.) The developmental policies we examine are education (school administration, library services, and agricultural education) and public ways and facilities (including roads, transportation systems, and parking). Finally, our redistributive policies are healthcare (public health, medical care, mental health, drug and alcohol abuse services) and public assistance (welfare, social services, general relief, etc.).

To match the timing of our public opinion data (1990-1999), we use county expenditure data from the 1998-1999 fiscal year. We transform each of these budget lines into measures of per capita spending, by dividing each counties expenditures in each area by estimates of the county population in 1999 (California Institute of County Governments). Consequently, the dependent variables in the models that follow are estimates of per capita expenditures across six policy areas at the county level for 1998-99.

### Alternative Explanations

As noted, our main independent variable is county level political ideology, but we also consider other possible explanatory variables. For example, the literature on local policy determinants has long suggested the importance of a host of social, economic, structural, and demographic factors that shape public policy (for an excellent compilation of relevant factors see: Kantor and David, 1983)

*Socioeconomic Characteristics.* It is intuitive that fiscal capacity is a strong predictor of policy outputs (Dye 1966, 1979). How much a jurisdiction devotes to an activity must, in part, reflect the ability to support such services. Studies of subnational governments demonstrate that economic factors like the per-capita income of residents predict public sector expansion (Hawkins, 1971; Feiock and West, 1993). Education is also related to local expenditures: where

more educated publics are politically involved they tend to finance public programs. In the models presented below, we include measures of median household income, and the percentage of residents who have earned a high school diploma or higher. Data are drawn from the 2000 U.S. Census. It might be expected that counties with greater median incomes and educational attainment levels would have a greater capacity to increase spending across all the policy areas.

*Inter-governmental Revenues.* Although county spending levels can be viewed as partly a function of the socioeconomic characteristics of its residents, we also have to take into account that county expenditures are constrained by intergovernmental grants-in-aid or revenue sharing from the state or federal government. For example, counties may receive funding from the state or the federal government (or both) for welfare or health care programs but where levels of funding are often set by how many people live in a county who meet eligibility criteria rather than how much the county wants to spend. Because it is our goal to show that local ideological forces shape county spending choices, it is important to control for any effects driven by federal or state revenue sent down to county governments. To account for county spending choices influenced by state and federal funding levels we include in the regression models two variables labeled *state funds* and *federal funds* which are per-capita measures of state and federal revenues directed to each county in 1998-99. We expect higher levels of spending in those counties that receive higher per-capital levels of state or federal funding.

*County Government Structure.* There is a growing body of evidence that the structure of county governments influences policy decisions at the local level (Benton, 2002). This line of research has assessed whether “reformed” or “unreformed” county governments produce differences in expenditure levels or the extent to which policy is implemented efficiently (Benton, 2002; Schneider and Park, 1989). Reformed county governments are generally

considered to be those governments that have a home-rule charter, nonpartisan elections, and an elected or appointed executive. These structures are designed to build a county's capacity to respond to an increasing array of service demands of their residents in a professional and efficient manner.

In California, county-government structure does not differ dramatically—all can be considered “reform” governments in that they have nonpartisan elections and appointed executives. However, there is variation when considering the presence or absence of a home-rule charter—where 12 of the 58 counties are considered “charter” counties (Connell, 2001). A charter grants a county a greater degree of self-rule and self-determination that frees it from some legal restrictions imposed by the state (Duncombe 1977). Chartered governments can also leverage different fiscal reforms that makes it easier to respond to increasing resident demands for an expanded menu of services as well as higher levels of current services (Benton, 2002) Given this, we might expect higher levels of spending in chartered counties. In our regression models, we include a *county structure* dummy variable (1=charter, 0=no charter).

*Racial Politics.* Increasingly, political scholars point to racial diversity within any given environment as a significant predictor of public policy, and how public programs are distributed (Hero, 1998). Racial diversity may impact policy in a couple ways. Geographic proximity to large number of racial minorities may increase sentiments of racial threat among whites (Key, 1949; Stein, Post, and Rinden, 2000). Perceptions of racial threat tends to decrease support of policies perceived to help minority members (Stein, Post, and Rinden, 2000). Moreover, when public programs are perceived to target minority groups, program allocations tend to become less generous (Katz, 1989). Research of most relevance here shows local governments tend to impose tougher sanctions and fewer benefits to welfare recipients living in racially diverse

contextual environments (Keiser, Mueser, and Seung-Whan Choi, 2004). To control for the possible influence of race on the dependent variables, we include a measure of the percentage of black residents residing in each county. Data are drawn from the 2000 U.S. Census (U.S. Census Bureau).

## **Findings**

Table 3 provides OLS regression models for each of the six policy output dependent variables. Among the redistributive policy models county-level ideology appears to have an influence on redistributive policy outputs after controlling for other possible predictors; however, the ideology-redistributive policy relationship is statistically significant only when considering public assistance expenditures. The negative and significant coefficient on the ideology measure in the public assistance model indicates that more conservative counties, on average, spend less on public assistance than do liberal counties. *Ceteris paribus*, liberal counties are more likely to expend greater funds on welfare and other social services than those counties that are more conservative. Contrary to our expectations, the relationship between the ideology measure and health care expenditures failed to reach standard levels of statistical significance.

[Table 3 about here]

The debate over assistance to the poor and the scope of government involvement are more often politically contentious and structured by ideological beliefs and attitudes. Given this, it is not surprising to find that local ideological dispositions relate to outputs in these policy areas. A standard deviation change in ideology exemplifies movement from a relatively liberal place like Los Angeles County to a substantially more liberal place like Alameda County (with cities including Oakland and Berkeley), or alternatively a shift from a county like Orange in southern California to Humboldt County in the northern portion of the state. The standardized

coefficient for ideology in the public assistance model is .38, suggesting that a standard deviation shift in ideology would be associated with an additional \$119.49 spent per capita on a county's public assistance programs in 1998-1999.

Several additional dependent variables are associated with patterns of county level spending. Higher levels of income are associated with more spending with more general government spending, public protection, and public ways and facilities and less spending on public assistance programs. Higher levels of educational achievement are associated with more general government spending, public protection, and educational services. Counties structure also appears to influence spending choices, with those counties with home-rule charters spending less on public protection, public ways and means, and education, but more on public assistance programs. Counties with higher levels of per-capita state funding expend greater funds across each policy indicator, federal funds increases counties spending in both the public ways and facilities and public assistance expenditures policy categories. Finally, larger minority populations are associated with less spending on public ways and facilities, but more spending on health care and public assistance.

As expected, controlling for these alternative spending explanations, we find no significant relationship between ideology and any of the budget lines in the allocational or developmental areas we model. These findings lend support to Peterson's (1981) assertion that allocational policies like police and fire protection, and developmental policies like highway construction cause little political conflict and as we advance here, less likely to be influenced by local ideological dispositions. Significantly, these results suggest that the importance of ideology on local level policy making will depend to an extent on the issue under consideration.

Our results showing a significant relationship between our measure of county ideology and expenditures on public assistance programs but no relationship between ideology and health care expenditures may be a result from not having accounted adequately for the variation in sample sizes used to compute the ideology measure at the county level. In Table 1, we see sample sizes ranging from 14 (Trinity and Sierra Counties) to more than 10,000 (Los Angeles County). Given the obvious source of heteroskedasticity in these models, we would not trust conventional standard errors, so we estimated the models in Table 1 calculating robust standard errors. Still, we are concerned about potentially biased coefficients in these models and hypothesis tests marred by the uncertainty associated with these standard errors. Because we know that sample size will systematically affect the variance of the disturbances around the regression lines, we propose to deal with this more systematically modeling the variance of the regression line using heteroskedastic regression.

Harvey (1976) develops a regression model that allows us to systematically model sources of heteroskedasticity. A choice model is used to test hypotheses about the dependent variable and a variance model is used to explore systematic variance in the choice model's disturbance term:

$$(1) \quad y_i = x_i\beta + u_i \quad (i = 1, 2, 3, \dots, n),$$

$$(2) \quad \sigma_i^2 = e^{z_i\alpha} \quad (i = 1, 2, 3, \dots, n),$$

where  $y_i$  is a vector of observations on the dependent variable,  $x_i$  is a vector of observations on independent variables,  $\beta$  is a vector of parameters,  $u_i$  is the disturbance term of the choice model,  $\sigma_i^2$  is the variance of the disturbance term,  $z_i$  is a vector of observations of independent variables, and  $\alpha$  is a vector of parameters. In the traditional regression model, we assume the disturbances around the regression line are distributed Normal with a mean of 0 and a fixed variance ( $u_i \sim$

$N[0, \sigma^2]$ ). Harvey's multiplicative heteroskedasticity model, we anticipate systematic variance in the disturbance term.

Here we modeled the variance of the residuals of the choice model as a function of a computed margin of error, which takes into account sizes of the county sub-samples, as well as the size of the underlying population of the county sampled. This is roughly equivalent to the margin of error discussed with polling results, plus or minus some percentage that depends primarily on the number of people surveyed, as well as the size of the population of interest. Given the wide variance of county sizes as well as wide variance of sub-sample sizes, we thought it important to take both into account. We calculate margin of error (form more information see Weisberg, Krosnick, and Bowen, 1996:74) using the following formula:

$$(3) \text{ MOE} = \pm t \sqrt{\frac{p(1-p)}{N-1}} \sqrt{1-f},$$

where  $t = 1.96$  for a 95% confidence interval,  $p =$  the sample proportion which we set at .5 to calculate a conservative margin of error,  $N =$  number of observations in county sub-sample, and  $f =$  the sampling fraction, or the number of respondents in the county sub-sample divided by the total county population. Using the formula, we compute margins of error for the county-level ideology scores that varies from  $\pm 1.0\%$  (Los Angeles County) to  $\pm 27.2\%$  (Trinity County).

Table 4 shows models similar to those in Table 3, re-estimated with the variance models described above. We see that, as expected, the margin of error we computed for each county sub-sample is a systematic influence on the disturbance term of the choice model for each regression. The larger the margin of error, the greater the variance is around the regression line for a given observation.

Importantly, in the choice models, county ideology is a significant predictor of both public assistance and health care policy indicators. The ideology slope is attenuated a bit in the

public assistance model, but these models show with greater clarity our general argument that there is a relationship between local political ideology and expenditures on redistributive programs. Similar to results in Table 3, county ideology is significantly related to public assistance spending, with more liberal counties spending more on things like welfare programs. In addition, the significant negative coefficient for ideology in the health care model ( $p < .01$ ) suggests that there is more per capita spending on public health, medical care, mental health, or drug and alcohol abuse services in more liberal counties than in ideologically conservative counties. Support for these types of health care services, similar to those connected to other forms of public assistance like welfare tend to break down along political ideological lines. Overall these results suggest that ideological cleavages at the local level help drive differences in counties spending choices across redistributive policies. As expected there is still no relationship between political ideology and public protection, education, or public ways and facilities spending.

### **Conclusion**

The findings presented here suggest students of subnational politics would benefit from paying additional attention to the ideological variation *within* individual states as well as variation between states. We find that local policy outputs are influenced by counties' ideological dispositions where more liberal/conservative counties produce more liberal/conservative outputs across a wide range of policy areas including public health, educational services, and welfare. Moreover, the influence of counties' ideology on outputs varies across different policy issues with ideology playing a more important role on those issues characterized by a higher degree of political conflict, and a less important role on issues where

little conflict occurs. Importantly, our findings challenge previous assumptions connected to the local policy making process, that suggests local economic considerations are the driving force behind local policy decisions and because of this, local governments should not be uniformly biased against redistributive policies. Here, we show that that under the right conditions there is still room for local politics to influence policy choices.

Our work also indicates that scholars of state and local politics can use a well-established, multi-year state survey instruments like the California Field Poll to create reliable, valid, and stable measures of local ideology. Using similar methodological tools outlined here, scholars can advance our understanding of the way local public opinion influences local policy making and the extent to which policy represents the political interests of diverse, localized populations. In short, we believe the analysis here adds to the growing body of work suggesting that a variety of local political forces continue to shape policy.

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**Table 1. Ideology Scores by County with Sample Sizes**

<b>County Name</b>	<b>Ideology</b>	<b>Sample Size</b>	<b>County Name</b>	<b>Ideology</b>	<b>Sample Size</b>
Sierra	50.00	14	Merced	25.12	215
Madera	41.27	127	Glenn	25.00	37
Tulare	41.23	350	Del Norte	24.24	33
Shasta	37.40	253	Lassen	24.07	55
Mariposa	37.14	37	Butte	23.75	361
Kern	36.35	666	Tuolumne	23.66	93
Inyo	35.25	34	Solano	21.01	404
Sutter	35.14	116	Monterey	21.00	430
El Dorado	34.95	208	Napa	20.75	166
Mono	34.78	23	San Diego	19.94	3044
Fresno	34.38	774	Santa Barbara	19.73	524
San Benito	33.78	74	Sacramento	19.35	1459
Nevada	32.61	184	San Luis Obispo	18.18	396
Tehama	31.82	89	Imperial	15.00	120
San Bernardino	31.74	1727	Humboldt	13.27	200
Amador	31.58	57	Lake	10.59	86
Riverside	30.36	1460	Modoc	10.53	21
Kings	30.36	116	Los Angeles	10.38	10326
Orange	29.74	3451	Santa Clara	8.41	2020
San Joaquin	29.39	570	Contra Costa	8.36	1100
Yuba	28.92	83	Mendocino	6.45	127
Ventura	27.86	854	San Mateo	3.27	973
Calaveras	27.78	72	Yolo	0.00	193
Plumas	27.78	37	Sonoma	0.00	565
Placer	27.59	296	Santa Cruz	-5.81	348
Trinity	27.27	14	Alameda	-7.78	1740
Colusa	26.92	26	Marin	-11.90	338
Siskiyou	26.92	78	Alpine	-20.33	15
Stanislaus	26.56	441	San Francisco	-25.35	1449

**Table 2. Representativeness of Field Poll County Samples**

	2000	1990	Average 1990/2000
Education	.91**	.91**	.91**
Income	.90**	.92**	.92**
White	.75**	.76**	.76**
Black	.87**	.88**	.88**
Asian	.86**	.87**	.87**
Democratic Party Registration	.76**	.78**	.77**

\*\* p<.01. Education is measured by the percentage of county residents who have earned a bachelors degree or higher. Income is measured by correlating the percentage of Field Poll respondents who mentioned their total household income was between \$20,000-\$40,000 dollars and the median household income of the respondent's county reported by the U.S. Census. Racial characteristics are based on sample estimates drawn from self-reported information from the Field Poll and are correlated with U.S. Census data. Democratic Party registration is based on the percentage of Field Poll respondents who identified themselves as members of the Democratic Party and correlated with voter registration data housed by the California Secretary of State.

**Table 3. Modeling Local Per Capita Spending across Six Policy Areas, OLS with Robust Standard Errors**

	Allocational Policies		Developmental Policies		Redistributive Policies	
	General	Public Protection	Education	Public Ways & Facilities	Health Care	Public Assistance
Ideology	-1.579 (1.766)	.164 (1.039)	-.341 (.213)	2.53** (.848)	-2.260 (1.694)	-1.804** (.557)
Income	0.006** (.002)	0.004** (.001)	-0.000 (.000)	0.005*** (.001)	-0.002 (.002)	-0.005*** (.001)
Education	4.806 <sup>†</sup> (2.82)	2.730 <sup>†</sup> (1.523)	0.355 <sup>†</sup> (.191)	-0.158 (1.226)	-2.348 (3.14)	1.41 (1.31)
County Structure	-57.9 (37.532)	-44.513 <sup>†</sup> 25.447	-4.43 (2.78)	-38.45* (16.310)	52.167 (48.874)	41.156** (13.684)
State Funds	1.353*** (.273)	1.103*** (.152)	0.080*** (.021)	0.678*** (.072)	0.394** (.159)	0.106 <sup>†</sup> (.059)
Federal Funds	0.219 (.191)	0.068 (.115)	0.021 (.014)	0.533*** (.119)	0.127 (.126)	0.395** (.128)
Black	-120.454 (391.36)	78.467 (299.347)	16.757 (40.753)	-505.414* (225.408)	270.137 <sup>†</sup> (315.185)	543.443** (494.947)
Constant	-1057.21*** (194.442)	-542.836 (147.087)	-56.957 (22.547)	-561.641 (86.492)	71.533 (198.006)	319.931*** (76.207)
	N = 57 F <sub>7,49</sub> = 5.48** R <sup>2</sup> = .83	N = 57 F <sub>7,49</sub> = 10.61** R <sup>2</sup> = .87	N = 57 F <sub>7,49</sub> = 4.59** R <sup>2</sup> = .76	N = 57 F <sub>7,49</sub> = 150.58** R <sup>2</sup> = .88	N = 58 F <sub>7,50</sub> = 1.18 R <sup>2</sup> = .46	N = 57 F <sub>7,49</sub> = 32.00*** R <sup>2</sup> = .77

\*\*\*p<.001, \*\*p<.01, \*p<.05, <sup>†</sup>p<.10. Robust standard errors shown in parentheses below each coefficient.

**Table 4. Modeling Local Per Capita Spending across Six Policy Areas, Heteroskedastic Regressions**

	Allocational Policies		Developmental Policies		Redistributive Policies	
	General	Public Protection	Education	Public Ways & Facilities	Health & Sanitation	Public Assistance
<u>Choice model</u>						
Ideology	-0.219 (0.500)	0.676 (0.696)	-0.042 (0.071)	-0.153 (0.388)	-1.17** (.545)	-1.117* (0.573)
Income	-0.000 (0.000)	0.001 <sup>†</sup> (0.001)	0.000 (0.000)	0.001 (0.000)	-0.001 (.001)	-.004*** (0.000)
Education	1.35 (0.949)	0.196 (1.242)	0.242 <sup>†</sup> (0.130)	0.903* (0.768)	.673 (1.47)	0.717 (.988)
County Structure	-27.10** (11.280)	-42.620** (16.623)	-3.897** (1.675)	-13.453 (8.654)	41.58 (45.08)	34.10** (14.635)
State Funds	0.332** (.125)	0.699*** (.134)	0.031** (0.015)	0.177 <sup>†</sup> (0.101) <sup>†</sup>	0.191*** (.048)	.069 (.081)
Federal Funds	-.105 (.086)	0.013 (.109)	0.009 (0.111)	0.124 (0.069)	.144* (.073)	.503*** (.083)
Black	-181.335 (154.470)	-20.166 (215.572)	14.243 (22.081)	-253.615** (121.68)	-343.833 (461.385)	399.776** (183.181)
Constant	-77.002 (81.056)	-90.600 (108.370)	-26.139** (11.431)	-102.497 (62.316)	-3.133.* (100.990)	328.853*** (83.293)
<u>Variance model</u>						
Estimated margin of error	29.566*** (2.827)	17.712*** (2.827)	21.073*** (2.827)	36.222*** (2.827)	16.618*** (2.804)	10.822*** (2.827)
Constant	5.473*** (0.316)	6.794*** (0.316)	2.046*** (0.316)	4.658*** (0.316)	10.608*** (0.310)	6.863*** (0.316)
	N = 57 $\chi^2 = 192.35$ *** ps. $R^2 = .23$	N = 57 $\chi^2 = 144.02$ *** ps. $R^2 = .18$	N = 57 $\chi^2 = 120.58$ *** ps. $R^2 = .23$	N = 57 $\chi^2 = 128.59$ *** ps. $R^2 = .18$	N = 58 $\chi^2 = 58.38$ *** ps. $R^2 = .08$	N = 57 $\chi^2 = 92.24$ *** ps. $R^2 = .13$

\*\*\*p<.001, \*\*p<.01, \*p<.05, <sup>†</sup>p<.10