Congress, the Courts, and Public Policy: Consequences of the One Man, One Vote Rule*

Mathew D. McCubbins, University of California, San Diego
Thomas Schwartz, University of California, Los Angeles

Our thesis is that court-ordered congressional redistricting based on the One Man, One Vote Rule created a large metropolitan majority in the U.S. House of Representatives and that this representational change spawned policy changes that reallocated government benefits, to some extent, from rural to metropolitan citizens. Focusing on the state rather than the federal level, previous research had found little or no policy change attributable to the One Man, One Vote Rule. Our argument is based on the structure and operation of U.S. representative institutions, particularly the electoral incentives by which these institutions discipline officeholders. In contrast to earlier studies, which related predicted policy changes to measures of malapportionment per se, we test our hypothesis by regressing budget changes that differentially affected rural and nonrural citizens against a measure of the gain in metropolitan seats resulting from court-ordered changes in congressional districts. We conclude with a discussion of three categories of policy change (agriculture, regulatory activity, and transportation) that our findings help explain.

For all the talk about consumerism, environmental protection, deregulation, and other policy trends, scant attention has been given one of the biggest policy stories of the past two decades: the continuing reallocation of federal policy benefits from rural to nonrural Americans. We aim to show that such a pattern of policy change occurred and to explain it, in part, as a consequence of court-ordered congressional redistricting based on the One Man, One Vote Rule.

Such celebrity still surrounds earlier representational reforms, beginning with the Reform Act of 1832, that it would have been surprising had the equalization of congressional and state-legislative districts not changed policy in predictable ways. Yet just that is the finding of previous empirical research: a variety of studies found little or no evidence of policy changes attributable to the One Man, One Vote Rule (Jacob, 1964; Dye, 1965; Hofferbert, 1965; Brady and Edmonds, 1967; Frye and Winters, 1970; Erickson, 1973). Five studies did report some policy effects (Pulsipher and Weatherby, 1968; Hanson and Crew, 1973; Frederickson and Cho, 1974; Sokolow, 1976; O’Rourke, 1980). But problems of multicollinearity in the first three were discovered by Newcome and

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1 Many political scientists had joined jurists and political reformers in contending that legislative malapportionment, state and federal, had policy consequences, hence that redistricting would spawn policy change (see Key, 1963; Jewell, 1962, pp. 30–33; Baker, 1955, pp. 19–26, and 1960, p. viii; Havard and Beth, 1962, p. 77; Keefe and Ogul, 1964, p. 86; Lockard, 1959, p. 275; and Sorauf, 1962, p. 22).
Hardy (1980), who showed that respecification of the models wiped out positive results, and the effects reported by the last two studies were too modest to make a case for the efficacy of redistricting.2

The contrast between these findings and ours is attributable to differences in substantive focus as well as methods. Previous studies looked only for state-level policy changes attributable to state-legislative reapportionments, often focusing on policy areas that are, as Bicker (1971) and Erickson (1973) have argued, questionably related to malapportionment (home rule, income tax, educational spending). We instead looked for federal policy changes attributable to congressional redistricting, focusing on policies that affect the allocation of government benefits between rural and metropolitan voters—the very type of policy that had exercised petitioners in the reapportionment and redistricting cases. And where others related hypothesized policy changes to measures of malapportionment per se, we relate them to court-imposed changes in the rural/metropolitan composition of Congress. Finally, where most of the earlier studies were cross-sectional and, therefore, unsuited to finding changes, we examine a time series of federal appropriations.

In section 1 we describe the sequence of events running from the One Man, One Vote decision and court-ordered redistricting to a rural/metropolitan reallocation of policy benefits, arguing that the reallocation was a predictable consequence of the court decisions, given the basic design of our representative institutions. We thereby take issue with those who have contended that representational reforms and other institutional changes are not likely to affect policy (Dye, 1976, p. 31; Aranson, 1982; Becker, 1983). In section 2 we test our hypothesis by regressing changes in the federal budget that differentially affected rural and nonrural citizens against a measure of increased metropolitan representation resulting from court-ordered changes in congressional districts. Our concluding discussion highlights the analytical utility of our findings, calling attention to several independently interesting policy changes that fit the pattern of a rural/metropolitan reallocation.

1. From the One Man, One Vote Rule to a Reallocation of Policy Benefits

Our explanation of this reallocation has three steps: first, court-ordered redistricting brought about equal-sized congressional districts. Second, this change turned a disproportionately rural House of Representatives into one with a large metropolitan majority. Third, this new majority made policy changes that reallocated government benefits, to some extent, from rural to metropolitan voters. Here we spell out each step in turn, adducing evidence that the events occurred and arguing for the explanatory connections, pausing before the third step to examine the forms that reallocating policies can take. Our analysis rests on the

2Other studies found that state-legislative reapportionments had some effects on the relative fortunes of political parties (see Erikson, 1971; Robeck, 1972; Scarrow, 1980/81; and Tufte, 1973).
structure and operation of our representative institutions, particularly the electoral incentives by which these institutions discipline officeholders.

First-Step: Court-Ordered Redistricting and the Equalization of Congressional Districts

After ruling in *Baker v. Carr* (396 U.S. 186, 1962) that state-legislative apportionments are judiciable, the U.S. Supreme Court enunciated the One Man, One Vote Rule for congressional districts in *Wesberry v. Sanders* (376 U.S. 1, 1964), requiring districts to be equal in population: “as nearly as practicable one man’s vote in a Congressional election is to be worth as much as another’s.” Thereafter, federal courts engaged in a massive redistricting effort: eight states were redistricted for the 89th Congress (1964), 24 for the 90th, 17 for the 91st, and six for the 92nd.

The effect on district equality was dramatic. Judged by the 1960 Census, the ratio of largest to smallest congressional district was four to one for Texas and three to one for Arizona, Maryland, and Ohio. In the 88th Congress (1962), only nine districts were within 1 percent of the average size in their states, and 236 districts deviated at least 10 percent each from the average. But in the 93rd Congress (1972), 385 districts deviated less than 1 percent from the average.

Although a number of actors and institutions played roles in redistricting, for the most part it was court intervention, direct or indirect, that wrought these changes: concerned with their own electoral support, state legislators and members of the U.S. Congress had scant incentive to rectify inequalities among congressional districts on their own. Because rural voters were thought to benefit from inequalities, most rural representatives would have opposed equalization. More generally, to redraw a district map is to reallocate a constant benefit, or “fixed pie,” and elected representatives are loath to touch issues of this sort, partly because any decision on the allocation of a fixed pie is bound to displease many voters and politicians, and partly because the outcome of voting on such an allocation is perforce unstable, hence uncertain: for every possible allocation of the pie, another is better than it for some majority (Ward, 1960; Frohlich and Oppenheimer, 1978, p. 126). Members of Congress with secure electoral bases (including representatives of oversized metropolitan districts) had an additional incentive to avoid the redistricting issue: they had something to lose and nothing to gain from any sweeping change in district maps. Federal apportionment acts passed after the 1870–1910 censuses did require U.S. representatives to be “elected from districts . . . containing as nearly as practicable an equal number of inhabitants.” But these acts did not authorize judicial enforcement, and after the 1920 Census, which first reported an urban majority, Congress passed no apportionment act until 1929, when it dropped the requirement of district equality. Beginning in 1952, repeated attempts by Rep. Emanuel Celler (D-NY) to re impose such a requirement, coupled with judicial enforcement, failed.
Second Step: From Redistricting to Increased Metropolitan Representation

The 1950 Census showed an overwhelming majority of Americans to be metropolitan rather than rural in the sense that they lived in standard metropolitan statistical areas (SMSAs), each consisting of a central city and its suburbs, and by 1960 metropolitan Americans outnumbered rural Americans nearly two to one. Yet as late as 1964 there were 214 congressional districts with a rural majority. By 1968, however, there were 155 such districts, and by 1972, 130.³

FIGURE 1

Changes in Congressional Districts Due to Redistricting

<table>
<thead>
<tr>
<th>89th Congress ('64)</th>
<th>90th Congress ('66)</th>
<th>91st Congress ('68)</th>
<th>92nd Congress ('70)</th>
<th>93rd Congress ('72)</th>
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![Bar chart showing changes in congressional districts.]

Number of Seats Gained

34 18 12 12

Number of Seats Lost

-36 -13 -13 -27

Definitions:

R = rural (0–10 percent of district’s population live in an SMSA).
PR = predominantly rural (10–40 percent live in an SMSA).
RM = mixed (40–60 percent live in an SMSA).
PM = predominantly metropolitan (60–90 percent live in an SMSA).
M = metropolitan (90–100 percent live in an SMSA).

³Data reported in the above paragraph on changes in the metropolitan-rural composition of the House come from Current Population Reports, Series P-20, Nos. 157, 163, and 197, Bureau of the Census, U.S. Department of Commerce. The data reported in the second paragraph and Figure 1 were collected from the Congressional District Data Book and its supplements, published by the Bureau of the Census. Other demographic, boundary, and redistricting information was collected from the Congressional Quarterly Census Analysis: Congressional Districts of the United States.
To be sure, such a coarse classification of districts can hide important differences: a district with a rural majority could be nearly half metropolitan, and the difference between a rural and a metropolitan majority might be so small as to have no appreciable effect on elections or congressional votes. In Figure 1, however, we use a finer classification of districts to depict changes in the composition of Congress: "rural" districts (as we shall henceforth use this term) have no more than 10 percent of their populations living in any SMSA; "predominantly rural," 10–40 percent; "mixed," 40–60 percent; "predominantly metropolitan," 60–90 percent; and "metropolitan," at least 90 percent. As the bar graph shows, even if districts are classified as rural or metropolitan according to stringent criteria, an impressive shift in the rural/metropolitan composition of Congress occurred between Wesberry v. Sanders and the 1970 Census.

With the U.S. population becoming increasingly metropolitan, one might wonder how much of the gain in metropolitan seats can be attributed to court-mandated redistricting as opposed to population growth and migration. Fortunately, we can observe a controlled experiment, with treatments provided by federal courts. Before 1972, courts required states that drew new district boundaries to use 1960 Census figures. And in constructing Figure 1, we used 1960 Census figures for the 89th and 90th congresses (1964 and 1966), thereby excluding demographic effects. Although we used 1970 Census figures for the 91st through 95th congresses, we discounted statewide changes (in the proportion of the population living in SMSAs) from the change within each district to control for migration and growth. (Because they underwent no change by our discounted measure, the 94th and 95th congresses are omitted from Figure 1.) Therefore, all the changes shown in Figure 1 may fairly be attributed to court-ordered redistricting.  

Why would the One Man, One Vote decision have led to a significant increase in metropolitan representation? Although it outlawed district maps con-

Congressional Quarterly Press, 1964; Congressional Quarterly Weekly Report, No. 34, 21 August 1964; Congressional Districts Atlas (Districts of the 92nd Congress), the Bureau of the Census; and Congressional Districts in the 1970's and its revisions by Congressional Quarterly Press.

Our budget data are from the Annual Senate Document Appropriations, Budget Estimates, etc., the section entitled "Itemized Comparisons of Budget Estimates and Appropriations Arranged by Senate Acts." Although many agencies received additional funding in supplemental and deficiencies acts, the amounts were almost always quite small, and including them in appropriations totals would have had little effect on our results. The economic and political variables we used were defined in Kiewiet and McCubbins (1985a).

Noragon (1972) also found an increase in metropolitan representation. His numbers are less dramatic than ours because, following Hacker (1963, pp. 80–85), he used a single, comparatively small rural category, casting his nonrural net widely in order to compare urban with suburban gains within the nonrural category. Where Hacker had found that the greatest number of oversized districts (above 115 percent of the state population norms) were suburban in 1960, Noragon showed that redistricting increased the number of urban as well as suburban districts, the former more than the latter.
taining large metropolitan districts along with small rural ones, this decision did not by itself forbid maps that grossly underrepresented the metropolitan majority by packing part of it into a minority of heavily metropolitan districts while dispersing the remaining part among many predominantly rural districts. But such a pattern would have been exceedingly improbable on four other grounds. First, metropolitan residents are not only a majority but an overwhelming one. Second, it is almost impossible for a large number of metropolitan voters to be dispersed among many predominantly rural districts because, by definition, metropolitan voters live in geographic clusters. True, sufficiently outlandish political cartography could have partly offset such clustering. But courts and even state legislatures observe severe technical limits on the creativity with which district lines can be drawn (Cain, 1984). Third, the state legislatures that might have contrived to underrepresent metropolitan voters had themselves been reapportioned according to the One Man, One Vote Rule. Finally, the prevalent practice of drawing district maps to protect specific incumbents or parties would not by itself have interfered with an increase in metropolitan representation: incumbents and parties bent on keeping their seats would modify their policies to reflect the interests of any new constituents.

Forms of Reallocation

Policy decisions that reallocate benefits from rural to metropolitan voters can take a variety of forms, differing in three dimensions: incidence of benefits, policy instrument, and institutional actors. Before arguing that redistricting spawned a rural/metropolitan reallocation, let us add some flesh to the bare bones of our reallocation hypothesis by examining each of these dimensions.

Beginning with incidence of benefits, there are three basic forms of reallocation: a decrease in benefits directed chiefly at rural voters, such as agricultural price supports; an increase in benefits directed chiefly at metropolitan voters, such as housing subsidies and income relief; and the preservation of rural policy benefits by packaging or logrolling them with new or expanded metropolitan benefits, as when food stamps came to be included in agriculture bills.

The third form of reallocation merits special attention. A reallocating policy change can actually preserve rural benefits, as long as metropolitan voters get something new in the deal, something they would not have got had rural seats not decreased in number. Nor need such a policy change benefit the whole metropolitan majority: a rural-metropolitan logroll is likely to involve only part of that majority (the urban part, in the case of Food Stamps).

The policy instruments of reallocation can be quite a varied lot. In section 3, for example, we argue that certain changes in regulatory policy effected a rural/metropolitan reallocation. But the most obvious and direct instruments are changes in annual appropriations to federal agencies (or programs). Because many federal agencies administer projects, services, and direct transfers that dif-
ferentially affect rural and metropolitan citizens, differences in appropriations among agencies and over time provide a reasonable measure of changes in the rural/metropolitan allocation of government benefits. To the extent that a reallocation has taken place, we should expect to see a decrease in appropriations for agencies that chiefly serve rural interests and an increase in appropriations for agencies that chiefly serve either metropolitan interests or a combination of rural and metropolitan interests.

When examined for evidence of a reallocation, however, appropriations figures can be misleading because an agency might serve a broader clientele than its name suggests. For example, although the U.S. Department of Agriculture received 6 percent of the federal budget in 1965 and again in 1980, programs with predominantly metropolitan clienteles increased their share of the USDA allocation during this period. Food Stamps grew from $80 million in 1966 to almost $6 billion in 1979, while the School Lunch Program grew from $146 million in 1965 to over $1 billion in 1979.

Another reason annual appropriations figures can be misleading is that some federal programs are funded by “permanent appropriations”: actual expenditures are determined by formulas enacted as part of the authorizing legislation, and annual “appropriations” are mere estimates of expenditures. This is especially important for our study because agricultural price supports—the most conspicuous rural benefits—are funded that way: payments to farmers are determined, not by the dollar amounts assigned to farm subsidies in annual appropriations bills, but by formulas stated in quadrennial agriculture acts. If we are right, redistricting should have affected those acts in ways that reduced subsidies in the long run, but a steady year-by-year decline would have been somewhat less likely—and all the more impressive.

Besides the redistricted House of Representatives, the institutional actors of reallocation include the Senate and president. Because the House, Senate, and president must agree on legislation, each will try to accommodate the others to some extent, and so the Senate and president may be expected to take increasing account of metropolitan interests as metropolitan House districts increase in number (see Shepsle and Weingast, 1985, for a rigorous demonstration of this point). Since the president values congressional cooperation, even his administrative decisions should reflect the increased congressional representation of metropolitan voters.

The institutional actors of reallocation also include the bureaucracy. As the creatures and wards of Congress, executive agencies can be expected to follow and even anticipate changing congressional preferences. Elsewhere we developed an empirically supported model of congressional control of the bureaucracy based on lawmakers’ pursuit of electoral support and the bureaucracy’s pursuit of congressional support (McCubbins and Schwartz, 1984; see also Weingast and Moran, 1983; Weingast, 1984). The model implies that Congress secures bu-
reaurtrtic policy compliance in far greater measure than many scholars had
thought, doing so less by detailed legislation or direct surveillance of the execu-
tive branch than by a decentralized system of “fire alarms” through which
bureaucratic violations of congressional goals trigger complaints followed by
sanctions—bureaucratic, judicial, or congressional. As a result, changes in the
rural/metropolitan composition of Congress are likely to be reflected in bureau-
ocratic policy changes even without new legislation.

Because appropriations are so important as instruments of reallocation, it
is worthwhile to see how redistricting is likely to affect the institutional actors
involved in the budget process. Funding of federal programs is determined
by a sequential bargaining game between the administration, working through
the Office of Management and Budget, and Congress. Beginning with budget
requests from federal agencies, OMB frames the administration’s request for
each agency’s activities. Because agencies tend to comply with congressional in-
terests, and because the president seeks agreement with Congress, we can expect
changing congressional interests to be captured, not only by congressional
changes in the OMB budget, but by the OMB requests themselves. In examining
federal appropriations for evidence of a reallocation, therefore, we cannot look
solely at congressional actions. On the contrary, if OMB has anticipated con-
gressional demands well enough, reallocating changes should show up almost
entirely in the OMB budget and hardly at all in congressional alterations of that
budget.

Third Step: From the Derestication of Congress to a Derestication of Policy

The gain in metropolitan seats produced by redistricting led in turn to policy
changes that reallocated government benefits, to some degree, from rural to met-
ropolitan citizens. Rural benefits did not disappear, but they declined relative to
metropolitan benefits. This pattern may be seen in three programs: the Sugar Act,
which benefited farmers; federal Housing Assistance, whose benefits were di-
rected chiefly at metropolitan areas; and the School Lunch Program, which
served a combination of rural and metropolitan interests (farmers and the urban
poor). As Figure 2 shows, federal appropriations for Housing Assistance and
School Lunch soared in the early 1970s while Sugar Act payments declined in
real terms, disappearing in 1976.

Note that the effects of redistricting (assuming our explanation to be cor-
rect) were far from gradual: Figure 1 depicts almost no change until the late
1960s, then an explosion in the early 1970s. That may be because it took time
for the new metropolitan majority to acquire expertise, achieve critical size, gain
procedural control, and enact legislation; as we explain below, procedural con-
tral was gained in the early 1970s.

The pattern of Figure 2 is repeated in other budget items, including the ob-
vious test cases. Appropriations for Agricultural Commodity Programs (an um-
brella label for most price-support programs) declined from $259 million in 1947 to $225 million in 1965, then to $190 million in 1979, a total decrease of almost 50 percent in real terms, and the Food for Peace appropriation declined from $1.9 billion in 1965 to $805 million in 1979, a 75 percent real decrease. The small Soil Conservation and Flood Control Programs did receive increases during this period, but they serve the interests of conservationists and environmentalists as well as farmers, and their increases were quite modest. By contrast, Community Development Grants increased from $20 million in 1947 to $295 million in 1964, then to $4 billion in 1979; funding for CETA went from $165 million in 1964 (its year of inception) to $3.33 billion in 1978; the Office of Education, whose budget had grown from $24 million in 1950 to $1.4 billion in 1965, received $8.7 billion by 1979; and the Food Stamps appropriation grew from $80 million in 1966 to almost $6 billion in 1979. Of these items, Agricultural Commodity Programs ranked first in appropriations in 1965, School Lunch second, and the Sugar Act third. By 1978 Housing Assistance ranked first, Community Development second, and CETA third. Although some reallocation
took place before Wesberry, the reallocation thereafter was greater by an order of magnitude, and in the ranking of programs by size of budget, rural programs lost their top positions to metropolitan programs.

True, the reallocating effects of some policy changes can be offset by other changes. But the budget items just surveyed include all those in which annual changes would, in our judgment, have provided clear evidence of a reallocation or its opposite. The reason we omitted the Commodity Credit Corporation is that its budget fluctuated wildly both before and after redistricting. Of course, non-budgetary policies can also affect the allocation of benefits between rural and metropolitan citizens. We examine several in section 3, showing that they had a reallocating effect.

Although much of the increase in metropolitan benefits served urban interests, suburban residents gained as well. Besides benefiting as taxpayers from the decrease in rural spending, they were arguably the chief beneficiaries of the Office of Education budget, the bulk of which went to higher education. Suburbanites also benefited from the reallocating changes in environmental, consumer, and transportation policy discussed in section 3. And Stockman (1975) has shown that a number of programs authorized by narrow margins and targeted at the urban poor quickly became unassailable pork barrels whose benefits were shared by suburban communities.

Our explanation of the rural/metropolitan reallocation is that the growing metropolitan House delegation acted as all legislators do, seeking increased benefits for their constituents to enhance their prospects of reelection. This does not mean that factors other than redistricting played no role in shaping reallocative policies, only that redistricting played a leading role. The possibility of competing explanations—ones that assign no role or a minor role to redistricting—requires us to examine (1) the district composition (rural vs. metropolitan) of those representatives who backed the reallocating changes and of those who opposed them, (2) the institutional impediments that might have prevented the growing metropolitan majority from working its will, and (3) the most likely alternative explanation: President Johnson's Great Society initiative.

(1) One might argue that our explanation assumes a correlation between congressional support for reallocating policy changes and metropolitan district composition: a strong correlation would make it likely that the increase in metropolitan representation was at least partly responsible for the changes, whereas a weak correlation would make it likely that other factors played the leading roles.

Unfortunately, the attempt to find a correlation between support for reallocating policy changes and metropolitan district composition runs up against three methodological problems. First, the most conspicuous changes were budgetary, yet the budget items described earlier appeared within appropriations acts comprising a host of other items and usually passed by voice vote. Consequently, roll calls are unavailable for the most important changes. Second, as we explained earlier, congressional preferences are likely to be anticipated, to a great
extent, in the OMB budget, making it hard to distinguish individual support for reallocating changes from individual inability to change the figures used as a baseline in the congressional budget process and deliberately concocted to avoid major congressional opposition. Third, as we also explained, a reallocating change can be the product of a rural/metropolitan logroll: rural representatives support increases in metropolitan benefits in return for the preservation of some rural benefits. In such a case, a reallocating policy change would enjoy the support of only part of the metropolitan delegation but a considerable part of the rural delegation: given our explanation, reallocating policy changes can reflect district composition in more than one way.

Despite these problems, there is some evidence that support for the reallocating policy changes reflected district composition in the expected manner. First, Sullivan (1985, 1986) examined roll calls for authorization bills dealing with housing, rent supplements, and Model Cities in the 89th and 90th congresses (1965–66 and 1967–68) and found that the greater the percentage of a representative’s constituents living in an SMSA, the more likely he or she was to have voted for these metropolitan-oriented measures.

Second, because appropriations bills are always comprehensive and often heterogeneous in their composition, it is reasonable to expect a reallocating budgetary logroll between rural and metropolitan lawmakers to be reflected in the packaging of benefits within a single bill: if diminishing rural benefits were thus packaged with more and greater metropolitan benefits after 1964, that would be evidence of a rural/metropolitan coalition behind a reallocating policy of salvaging some rural benefits while expanding metropolitan benefits. From the late 1940s through 1966, the appropriations act for the Department of Agriculture consisted entirely of rural benefits except for the very small School Lunch and Special Milk Programs, which benefited metropolitan residents as well as farmers. Then the Food Stamps Program was added in 1967 and grew from $110 million to $1.4 billion by 1971. The 1972 act contained a comprehensive $3.3 billion title for Environmental Protection, including a $500 million appropriation to HUD for Basic Water and Sewer Facilities, and a comprehensive $3 billion title for Consumer Protection and Services, including Office of Consumer Affairs, School Lunch, Food Stamps, FTC, and FDA. By 1976 the consumer portion of the USDA appropriations act had grown to well over $6 billion.

(2) There are ostensible institutional impediments that might have prevented any given House majority, especially a new one, from working its will. If the policy changes described above were indeed the creatures of increased metropolitan representation, then these ostensible impediments must not have been effective against the new metropolitan majority. Here we examine three such impediments.

First, the House of Representatives is not sovereign: the Senate and president must concur on legislation, and even the bureaucracy can affect policy. But
as we argued earlier, the Senate, president, and bureaucracy tend to accommodate the House to some extent, thereby allowing a new House majority to move in the direction if not always to the extent that it wants.

Second, there is nothing to require a given majority, even one with salient interests in common, to coalesce behind legislation: part of the metropolitan majority can coalesce with the rural minority, constituting a different majority coalition. But as we explained earlier, such a logroll, or packaging of rural and metropolitan benefits, would still allocate more to metropolitan districts (not all of them, of course), and probably less to rural districts, than would the actions of a House in which rural members had greater power.

Third, the power of congressional committees and their chairmen might have thwarted policy changes sought by the growing metropolitan majority. But because the rules and organization of each house are ratified by a majority vote, it is hard to see how they could work to the disadvantage of a well-defined majority in any flagrant, systematic way. In fact, the House of Representatives has become more egalitarian and majoritarian since the late 1960s. The Democratic Caucus has asserted its control over assignments and chairmanships, voting on chairmen one at a time by secret ballot, occasionally unseating a senior chairman, such as W. R. Poage (Texas) of Agriculture. Now a representative can chair only one committee or subcommittee, and committee chairmen have lost their control over subcommittees, which have increased in number and often are chaired by comparatively junior members. By 1977, indeed, almost half of all Democrats headed subcommittees, and often it was they rather than the chairmen of full committees who shepherded bills through the legislative process. During this period, the Speaker’s power increased: he now appoints all Democratic members of the Rules Committee and chairs the Democratic Steering and Policy Committee, created in 1973 (see Dodd and Oppenheimer, 1977; Sundquist, 1981). During this period, too, the composition of the Appropriations Committee reflected the increase in metropolitan seats. Using Congressional Quarterly’s classification of U.S. residents as rural or nonrural, let a member’s “ruralness” be the percentage of his or her constituents who are rural. Then the Appropriations Committee was on average 54 percent rural in 1964, 42 percent in 1972, and 26 percent in 1985, whereas the U.S. population became only 10 percent less rural during the same period.

(3) An alternative explanation that has been suggested to us for the budgetary changes reported above is that they resulted from presidential leadership, specifically from President Johnson’s Great Society initiative buttressed by the 1964 Democratic landslide.

Without denying a role to Johnson and the Democratic congressional majority, we contend that the reallocating changes cannot be fully explained except in terms of the increase in metropolitan representation brought about by redistricting. For one thing, if we ignore redistricting, then it is not clear how or why
Johnson or the Democratic party would have reduced agricultural price supports and terminated the Sugar Act. These were, after all, Democratically sponsored programs. Nor is it clear why the steepest shifts in annual appropriations occurred after Nixon was elected and the Democratic House majority reduced. More important, we have lately seen that the support coalitions for certain reallocating acts of Congress—some Great Society authorizations as well as some appropriations bills—had just the sort of district composition they would have had if redistricting explained the reallocation.

We do not deny that any number of political and economic variables had some effect on the precise form and extent of reallocating policy changes. Our problem is not to rule them out completely but to control for them in a test of the impact of redistricting. To such a test we now turn.

2. Redistricting, Reallocation, and Federal Appropriations: A Test

Having offered evidence of increased metropolitan representation attributable to court-mandated redistricting and of a rural/metropolitan reallocation of policy benefits, we propose to test our hypothesis that the increase accounts, at least in part, for the reallocation. The policy instruments we examine are federal appropriations. This requires a model of the appropriations process. After presenting such a model, we discuss budget data and methodology, then report and interpret our results.

Our test of the effects of redistricting is indirect: it controls for a number of political and economic variables but treats Congress as a black box, ignoring congressional organization and support coalitions. Earlier we presented evidence that congressional organization did not prevent the growing metropolitan delegation from acting together in its constituents’ interests and that support for reallocating policy changes correlated with district composition in the predicted way. It is because of severe limitations on evidence regarding support coalitions that we devised a test that, although indirect, rests on a rich data base. What would provide strong support for our hypothesis about the effects of redistricting is not a positive test result alone but agreement between such a result and the argument of section 1.

The Model

Our model of the appropriations process is based on the sequential bargaining game of section 1, in which OMB turns requests from federal agencies into the presidential budget submitted to Congress, which then passes appropriations bills. As we argued, because OMB is likely to anticipate congressional demands in many cases, the effects of redistricting are likely to show up first and foremost in OMB submissions. The model will reflect this by treating both OMB and congressional decisions as endogenous variables: not only are these two decisions interdependent, but our hypothesis is that redistricting affected both.
As in the model developed and tested by Kiewiet and McCubbins (1985a, 1985b), we assume that the president and members of Congress seek to maximize their electoral support from beneficiaries of government services, who base such support, in part, on benefits received. But voters are myopic: they discount past benefits and future costs. At the same time and partly for this reason, incumbents experience declining marginal returns in electoral support from appropriations. To maximize their reelection prospects, therefore, incumbents will choose spending levels that equate marginal returns in electoral support across agencies.

Kiewiet and McCubbins (1985a, 1985b) found several political and economic variables that determine budgetary decisions at the margin. One is the proximity of election day: since voters discount past benefits and future costs, the president and legislators have an incentive to “heap” policy benefits late in the electoral cycle. We denote this election-proximity variable as \( E^c_t \) for Congress and \( E^p_t \) for the president: \( E^c_t = 1 \) if the budget for fiscal year \( t \) was considered during a congressional election year (year \( t - 1 \)), 0 otherwise; \( E^p_t = 1 \) if the budget for \( t \) was considered during a presidential election year, 0 otherwise.

Appropriations strategies also depend on changing economic conditions. The economy affects congressional elections (Kramer, 1971), and campaign decisions take account of this (Jacobson and Kernell, 1981). Contributors can respond to unemployment or inflation by withholding funds from incumbents or funding challengers, and many groups have come to accept the Keynesian prescription of increased spending as a remedy for unemployment and decreased spending for inflation. We hypothesize, therefore, that Congress and the president respond to increased inflation by appropriating less and to increased unemployment by appropriating more. We denote the inflation and unemployment variables as \( I^c_t \) and \( \Delta U^c_t \) for Congress and as \( I^p_t \) and \( \Delta U^p_t \) for the president: \( I^c_t \) is the annualized percentage change in the Consumer Price Index during the first six months of the session in which Congress considers appropriations for fiscal year \( t \), \( I^c_t \) the same change during the six months before the president submits requests for \( t \), \( \Delta U^c_t \) the rate of change in unemployment during the first six months of the session in which Congress considers appropriations for \( t \), and \( \Delta U^p_t \) the same change during the six months before the president submits requests for \( t \).

Another variable affecting appropriations decisions is party politics: Democrats spend more than Republicans. Other things being equal, then, Democratic presidents should submit larger requests than Republican presidents, and Democratic congresses should appropriate more than Republican congresses. This hypothesis is compatible with our electoral-incentive view of legislative decision making because Republicans and Democrats have to please somewhat different constituencies (Fiorina, 1974; Fenno, 1975; Poole and Rosenthal, 1983). We denote the president’s party (during year \( t - 1 \), when the budget for \( t \) was considered) as PRES, (0 for a Democrat, 1 for a Republican) and the percentage of Democratic House members as HOUSE. During the transition from a Republi-
can to a Democratic administration, moreover, congressional accommodation of the president should result in higher appropriations than if the White House had remained Republican, whereas the opposite transition should occasion the opposite response (Kiewiet and McCubbins, 1985a, 1985b). We denote this presidential-transition variable as TRANS, (1 when a Democrat replaces a Republican, −1 when a Republican replaces a Democrat, 0 otherwise).

A final variable affecting budget decisions is the involvement of the United States in armed conflict, which we denote as WAR, (1 if the U.S. was at war in \( t - 1 \), when the budget for \( t \) was considered, 0 otherwise). Several studies have found that domestic-agency budgets are pared back during war (Pressman and Wildavsky, 1973, p. 31; Okun, 1970, p. 78; Padgett, 1981; Mowery and Kamlet, 1982).

We tested our hypothesis that redistricting led to a rural/metropolitan reallocation by estimating the following two equations:

\[
OMB_{it} = a + g_1 CONG_{it}^* + g_2 REDIST_{t-1}^* + g_3 I_t^p + g_4 \Delta U_{t-1}^p \\
+ g_5 HOUSE_{t-1} + g_6 E_t^c + g_7 WAR_t + g_8 PRES_t \\
+ g_9 E_t^p + u_{it} \tag{1}
\]

\[
CONG_{it} = d + b_1 OMB_{it} + b_2 REDIST_{t-1}^* + b_3 I_t^i + b_4 \Delta U_t^c \\
+ b_5 HOUSE_t + b_6 E_t^c + b_7 WAR_t + b_8 TRANS_t + e_{it} \tag{2}
\]

where OMB\(_{it}\) is the OMB request (in constant dollars) for agency \( i \) in (fiscal) year \( t \), CONG\(_{it}\) the congressional appropriation (in constant dollars) to agency \( i \) in year \( t \), CONG\(_{it}^*\) an instrument reflecting OMB’s forecast of CONG\(_{it}\), and REDIST\(_{t-1}^*\) an instrument for the increase in metropolitan representation due to redistricting. Measurement of this last variable presents special problems, discussed later. Note that each of our independent variables has a lag, of sorts, built into its definition: each stands for something that happened before fiscal year \( t \). For example, PRES\(_t\) is the president’s party in year \( t - 1 \), the year in which appropriations for \( t \) were decided. In equation (1), HOUSE\(_t\) is lagged an additional year, to reflect agencies’ current perceptions of Congress.

**Budget Data**

We collected OMB estimates and final appropriations from fiscal years 1948 to 1979 for three categories of programs: (1) metropolitan distributive programs (Housing Assistance, Manpower [CETA], Office of Education, and Community Development Grants, the latter comprising Urban Renewal, Urban Planning, Basic Water and Sewer Facilities, Urban Mass Transit, and Model Cities); (2) metropolitan-oriented agricultural programs (School Lunch and Rural Water and Wastewater Disposal Grants); and (3) traditional farm programs (Agricultural Commodity Programs, Soil Conservation, and Flood Control). We placed Rural Water and Wastewater Disposal Grants in category (2) because this program is of interest to conservationists and environmentalists as well as farmers.
Redistricting should have had a positive effect on appropriations for categories (1) and (2) and a negative effect on appropriations for category (3).

Because our hypotheses about the effects of redistricting concern *real* levels of funding, we converted nominal requests and appropriations figures into constant (1972) dollars using the Implicit Price Deflator for Federal Government Goods and Services.

**Methodology**

Our most serious methodological problem is that the increase in metropolitan representation attributable to redistricting is an unobserved variable: there are many natural but conceptually quite different ways to measure it and no a priori guarantee that any two measures will be highly correlated. One measure, which we call REDIST\(_t\), is the cumulative net increase in "metropolitan" districts (\(\geq 90\) percent of residents in an SMSA) as of year \(t\) according to Figure 1.\(^5\) There are, however, other measures of increased metropolitan representation based on residential characteristics and still others based on nonresidential ones, such as the types of industry in which constituents are employed.

From an econometric point of view, the prescribed technique for handling this problem requires the use of several highly correlated instrumental variables for the unobserved increase in metropolitan representation. The advantage of an instrumental-variables approach is that it uses all the information contained in several natural measures of the unobserved variable, whereas the use of a single measure as proxy loses some information. Even if the latter were done for every measure one at a time, the resulting estimation could be biased and inefficient. The instrumental variables we used were REDIST and three measures of employment characteristics.\(^6\)

\(^5\)Constructing a composite redistricting "score" from Figure 1 to use as an instrument presents many problems. Such a score would require too much from the taxonomy, and any deviations from monotonicity of support across categories would introduce error in our measure. We instead focus on the cumulative increase in the "metropolitan" category. Because we predict that policy will change as a result of an increase in metropolitan representation attributable to redistricting, our focus on that category tests our hypothesis directly.

\(^6\)We used the following instrumental regression for REDIST\(_t\):

\[
\text{REDIST}_t = \pi_1 + \pi_2 \text{MANUF}_t + \pi_3 \text{RETAIL}_t + \pi_4 \text{AGRIC}_t + \nu_t
\]

where MANUF\(_t\), is the mean percent in year \(t\) across districts of residents employed in manufacturing, RETAIL the same measure of residents employed in wholesale or retail trades, and AGRIC\(_t\), the same measure of residents employed in agriculture. In measuring these characteristics for the 91st to 95th congresses, we controlled for migration and growth by discounting statewide changes from the change within each district. For the 89th and 90th congresses, migration and growth were automatically controlled for by the use of 1960 census figures. The three employment variables on the right side of this equation serve as instrumental variables for REDIST\(_t\). The instrument constructed did a good job. Our estimates produced an \(R^2\) greater than 0.8, and analysis of the residuals showed no pathologies.
Another methodological problem has to do with the sequential nature of the bargaining game, in which OMB chooses its strategy in anticipation of congressional action: some instrumental-variables technique was needed to estimate OMB’s forecast of congressional action. Since our model is overidentified, we used two-stage least squares, which constructs instruments for the endogenous congressional forecast in the OMB equation and permits consistent and efficient estimates. Because final congressional action on the president’s budget occurs several months after submission, the OMB term in the congressional equation is treated as exogenous, and the congressional equation is estimated by ordinary least squares. The instruments we constructed for the congressional forecast in the OMB equation did a good job. The reduced-form equation for the congressional forecast all produced $R^2$'s greater than 0.6. We employed a test suggested by Hausman (1978) to check the robustness of these results to the use of OLS in the congressional equation. This test, essentially an $F$ test, showed that no gain in explained variance would have resulted from a two-stage estimation of the congressional equation.

Yet another problem lies in the small number of observations for each program: our full time series is 32 years, and for some programs the number of observations is less than that. For this reason, besides estimating equations (1) and (2) for every program individually, we pooled the data within each of our three categories and estimated these equations again. Pooling creates additional diagnostic problems, however, and requires a special estimation technique.  

A related problem is that to pool cross-sectional time-series data is implicitly to assume that the coefficients of the explanatory variables are equal across each cross-section, whereas they may differ across programs. An $F$ test was calculated, using the sum of squared residuals from the unrestricted 2SLS and the restricted (common coefficients) 2SLS estimation. These tests generally had insignificant results. The one exception was in pooling across the four metropolitan distributive programs. Pooling Community Development Grants, Housing Assistance, and CETA produced no adverse $F$ statistics, but the Office of Education did not pool with the other three. Although we estimated our equations for the Office of Education, we did not include OOE in the pooled regressions.

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7 Pooling cross-sections often introduces heteroscedastic error variances, leading to inefficient estimates. To correct for heteroscedasticity, we used the heteroscedasticity-consistent covariance-matrix procedure of White (White, 1980; MacKinnon and White, 1984). A second problem associated with pooling is cross-sectional correlation. An examination of the covariation between the residuals for the various agencies showed no consistent pattern, however, and few were significant. Serial correlation presented a different problem. Since Durbin-Watson statistics are not applicable to pooled cross-sectional time series, another method was used to check for serial correlation. Because pooling alone should introduce no serial correlation, it seems reasonable to assume that the pooled estimation is free of serial correlation if the nonpooled estimation is. This is, indeed, the case: the Durbin-Watson statistics calculated for the nine agencies independently proved inconclusive or failed to reject the null hypothesis of (non-first-order) autoregressive errors.
Since the increase in metropolitan representation is collinear with other trends, we were concerned that our results might be artifacts of those trends. We did several things to rule this out. First, a number of trends during our time period—inflation, unemployment, and the Viet Nam War—are controlled for explicitly in the regressions. Interestingly, our measures of redistricting covary only slightly with those trends. Second, although the correlation between our measures and national population growth and migratory trends is positive, it is generally small (less than 0.5 in all cases). Third, since many of the changes we studied coincided with President Johnson's Great Society initiative, a dummy variable for the Johnson presidency (1 for fiscal years 1964–69, 0 otherwise) and a dummy for the Great Society (0 for fiscal years 1948–65 and 1 for fiscal years 1966–79) were constructed. These proved not to be highly correlated with our measures of redistricting. We checked for possible bias in our estimate, however, by regressing the residuals resulting from our estimation of equations (1) and (2) against measures of population growth and migration, inflation, change in unemployment, a war dummy, a dummy for Johnson, and a dummy for the Great Society, finding no adverse results.

Regression Results and Analysis

If the data support our hypotheses, the congressional-forecast term in the OMB equation and the OMB-request term in the congressional equation should be positive. The redistricting term in the OMB equation should be positive for the metropolitan and metropolitan-oriented agricultural programs but negative for the traditional farm programs. The redistricting term in the congressional equation should be zero if the administration has perfectly anticipated congressional demand; otherwise its sign should be as predicted for the OMB equation. In the OMB equation the unemployment term should be positive and the inflation term negative, whereas in the congressional equation the unemployment term should be zero (perfect anticipation) or positive, and the inflation term zero (perfect anticipation) or negative. The congressional party-alignment term and the election term in the OMB equation should be positive, while the war dummy should be negative. The same variables in the congressional equation should mirror these expectations or be zero. Finally, the election-proximity and presidential-party variables—PRES in (1), TRANS in (2)—should be positive in both equations.

The results of our analysis provide strong support for our redistricting hypothesis. To save space, we report only the pooled results in Tables 1 and 2.

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8 We used the method of White (White, 1980; MacKinnon and White, 1984) to estimate (1) and (2) for each program individually. A battery of diagnostic statistics, designed to check for serial correlation, heteroscedasticity, trend, and nonnormality, showed no adverse results. A potential problem similar to heteroscedasticity which we did discover is that the regressions for each program are related. We took account of this in our pooled estimations.


TABLE 1
The Effects of Redistricting on Presidential Budget Requests

<table>
<thead>
<tr>
<th>Programs:</th>
<th>Metropolitan Distributive</th>
<th>Metropolitan-Oriented Farm</th>
<th>Traditional Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent Variables</strong></td>
<td><strong>Coefficient (standard error)</strong></td>
<td><strong>Coefficient (standard error)</strong></td>
<td><strong>Coefficient (standard error)</strong></td>
</tr>
<tr>
<td>Constant</td>
<td>-2.13 (3.17)</td>
<td>0.27 (0.92)</td>
<td>1.19 (1.17)</td>
</tr>
<tr>
<td>CONG*</td>
<td>0.84 (0.10)*</td>
<td>0.97 (0.03)*</td>
<td>0.82 (0.11)*</td>
</tr>
<tr>
<td>REDIST*</td>
<td>5.02 (3.00)*</td>
<td>-0.40 (0.35)</td>
<td>-1.44 (-0.60)*</td>
</tr>
<tr>
<td>I*</td>
<td>-0.28 (0.93)</td>
<td>0.39 (0.23)*</td>
<td>-0.20 (0.27)</td>
</tr>
<tr>
<td>ΔU</td>
<td>-1.65 (3.40)</td>
<td>-0.06 (0.07)</td>
<td>1.51 (1.06)</td>
</tr>
<tr>
<td>HOUSE*</td>
<td>4.50 (6.58)</td>
<td>-0.56 (1.89)</td>
<td>-2.11 (2.10)</td>
</tr>
<tr>
<td>E</td>
<td>-0.83 (0.68)</td>
<td>-0.05 (0.15)</td>
<td>0.01 (0.18)</td>
</tr>
<tr>
<td>WAR,</td>
<td>-1.19 (0.84)</td>
<td>0.02 (0.19)</td>
<td>0.14 (0.23)</td>
</tr>
<tr>
<td>PRES,</td>
<td>1.58 (0.65)*</td>
<td>-0.10 (0.15)</td>
<td>-0.19 (0.18)</td>
</tr>
<tr>
<td>E</td>
<td>1.66 (0.78)*</td>
<td>-0.10 (0.18)</td>
<td>-0.24 (0.22)</td>
</tr>
<tr>
<td>R²</td>
<td>0.92</td>
<td>0.98</td>
<td>0.89</td>
</tr>
<tr>
<td>SSR</td>
<td>5.2 × 10^{12}</td>
<td>4.6 × 10^{10}</td>
<td>1.6 × 10^{11}</td>
</tr>
<tr>
<td>n</td>
<td>90</td>
<td>42</td>
<td>62</td>
</tr>
</tbody>
</table>

**Notes:** *a = significant at the α = .05 level or better.

The variances and coefficients of most of the variables in Tables 1 and 2 are much greater than stated. We have reduced them for ease of presentation. To obtain the actual coefficients, multiply the value given for the constant term by 10^5, for the inflation and unemployment variables by 10^4, for the election-year dummies, number of House Democrats, presidential-party dummy, presidential-transition dummy, and war dummy by 10^3, and for the redistricting instrument by 1,000. Exception: The coefficient of TRANS in the congressional equation for the Office of Education is to be multiplied by 100.
The coefficient of the redistricting instrument is significant and in the predicted direction for the pooled metropolitan distributive and traditional farm programs in the OMB equations (Table 1). Redistricting also had a positive and significant effect on congressional appropriations for the metropolitan distributive and metropolitan-oriented farm programs (Table 2). Our test of the effect of redistricting on federal spending, then, provides substantial support for our hypothesis: changes in the representation of rural and metropolitan constituents had the predicted effect on spending in these three categories of programs.

Our estimation of equations (1) and (2) separately for each program (results are available on request) show much the same pattern. The redistricting term in

### TABLE 2

The Effects of Redistricting on Congressional Appropriations

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Metropolitan Distributive</th>
<th>Metropolitan-Oriented Farm</th>
<th>Traditional Farm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient (standard error)</td>
<td>Coefficient (standard error)</td>
<td>Coefficient (standard error)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.83 (2.74)</td>
<td>0.33 (0.81)</td>
<td>1.33 (0.89)</td>
</tr>
<tr>
<td>OMB$_u$</td>
<td>0.74 (0.05)*</td>
<td>0.99 (0.02)*</td>
<td>0.78 (0.07)*</td>
</tr>
<tr>
<td>REDIST$_{t-1}$</td>
<td>6.77 (2.33)*</td>
<td>1.12 (0.44)*</td>
<td>-0.70 (0.68)</td>
</tr>
<tr>
<td>I$_{t-1}$</td>
<td>-0.23 (1.32)</td>
<td>-0.79 (0.32)</td>
<td>-0.41 (0.40)</td>
</tr>
<tr>
<td>$\Delta U_{t-1}$</td>
<td>2.01 (3.34)</td>
<td>-0.42 (0.74)</td>
<td>1.23 (0.95)</td>
</tr>
<tr>
<td>HOUSE$_t$</td>
<td>-0.35 (0.47)</td>
<td>0.15 (1.36)</td>
<td>-2.23 (1.27)*</td>
</tr>
<tr>
<td>$E^c$</td>
<td>0.34 (0.48)</td>
<td>0.18 (0.11)</td>
<td>-0.05 (0.14)</td>
</tr>
<tr>
<td>WAR$_t$</td>
<td>0.19 (0.89)</td>
<td>-0.24 (0.22)</td>
<td>0.24 (0.26)</td>
</tr>
<tr>
<td>TRANS$_t$</td>
<td>0.67 (0.78)</td>
<td>0.17 (0.18)</td>
<td>-0.14 (0.22)</td>
</tr>
<tr>
<td>$\bar{R}^2$</td>
<td>0.94</td>
<td>0.98</td>
<td>0.87</td>
</tr>
<tr>
<td>SSR</td>
<td>$4.0 \times 10^{12}$</td>
<td>$4.3 \times 10^{10}$</td>
<td>$1.4 \times 10^{11}$</td>
</tr>
<tr>
<td>n</td>
<td>90</td>
<td>42</td>
<td>62</td>
</tr>
</tbody>
</table>

Note: * = significant at the $\alpha = .05$ level or better.
the OMB equation for Housing Assistance is positive and significant. Although the redistricting term in the OMB equations for the other three metropolitan distributive programs (Community Development, CETA, and Office of Education) are insignificant, the redistricting term in the corresponding congressional equations are all positive and significant. The redistricting instrument was positive and significant for School Lunch Programs in the OMB equation, and for Rural Water and Wastewater Disposal Grants in the congressional equation. The redistricting term was negative and significant for Agricultural Commodity Programs in the OMB equation, as it was for Soil Conservation and Flood Control Programs in the congressional equation.

It should be noted that the consequences of redistricting vary widely across programs: the effect of increased metropolitan representation on the 1979 budget for metropolitan programs was almost $1 billion, whereas the initial effect of a gain of 11 metropolitan seats on the budgets for traditional farm programs was a mere $20 million in 1966.

The results in Tables 1 and 2 are all the more impressive given the short duration of the experiment. The first court-ordered redistricting affected congressional elections in 1964. The last redistricting with any effect on the rural/metrodopolitan composition of Congress affected the 1974 election.

The results in Tables 1 and 2 provide only mixed support for our hypothesis of agency anticipation. The redistricting term in the OMB equations was significant and had the predicted sign for two out of the three pooled categories (and for half the individual programs), implying some degree of executive anticipation of congressional demands. For those individual programs for which estimation was possible and for the pooled categories, OMB requests showed the same sensitivity to changes in the party composition of Congress, the congressional electoral calendar, economic conditions, and redistricting as did congressional changes in OMB requests. In anticipating congressional preferences, OMB did better for Housing Assistance, School Lunch, and Agricultural Commodities Programs than for the other programs. The redistricting term in the OMB equations for these programs were as predicted; the other variables were significant too.

In the OMB equations the congressional terms are all positive and significant, as predicted. They are greater than 1.0 for metropolitan programs but less than 1.0 for farm programs other than Flood Control.

The coefficients of the political and economic variables in the OMB equations do not replicate the findings of Kiewiet and McCubbins (1985a, 1985b) and, in general, do not support our appropriations model. This may reflect differences between our agencies and those studied by Kiewiet and McCubbins: for the set of agencies that overlap their study, our results replicate theirs. The congressional equation provided more support for our appropriations model, chiefly because our predictions were weaker.
For many programs, the increase in metropolitan representation should have had no effect. These are line agencies that do not differentially effect rural and metropolitan interests. As a check on our methods, therefore, we pooled OMB requests and congressional appropriations for 12 such agencies (Bureaus of Customs, the Public Debt, Labor Standards, Labor Statistics, Standards, and the Mint, along with FBI, Federal Prison System, Immigration and Naturalization Service, IRS, Patent Office, and Secret Service) and estimated equations (1) and (2). The results, reported in McCubbins and Schwartz (1986), show that the redistricting terms, as expected, do not differ significantly from zero. These regressions also provide strong support for our appropriations model and replicate the results of Kiewiet and McCubbins (1985a, 1985b).

3. Discussion

Besides showing that a particular representational reform had policy consequences, the findings of this paper address the efficacy of our basic system of representative democracy. In their enforcement of the One Man, One Vote Rule, federal courts provided us with an experimental test of that system: Does policy monotonically reflect congressional representation? Would a large-scale change in the congressional representation of certain interests produce a like change in policy? The result of the experiment was positive: representative democracy seems to work as it should.

Perhaps the chief importance of our findings is their analytical utility. They suggest that we examine post-redistricting policy changes to see if they had the effect of reallocating benefits from rural to metropolitan voters. Given our results, it is reasonable to hypothesize that redistricting is one of the factors explaining such changes. This may be illustrated by changes in agricultural, regulatory, and transportation policy.

Agriculture

Before redistricting, the benefits of agricultural legislation were directed almost wholly at farmers. The chief example, of course, is price-income supports. These benefits have declined since redistricting. Congress imposed a payment ceiling and supply controls in 1970, and in 1973 it lowered this ceiling and replaced parity payments by supports for the cost of production. The sugar program was canceled in 1974, and in 1976 price supports for rice were replaced by a target-price system that lowered entry barriers. Overall, the level of support payments diminished throughout the 1960s and 1970s. Since 1965, they have been much lower than they were during the 1950s: wheat subsidies were reduced by almost half in a decade; corn and cotton subsidies, by more than one-third (Johnson, 1981, p. 186, Table 1). Farmers felt the effect: the total net real income of farm operators in 1976 and 1977 was the lowest since 1940 (Johnson, 1981, p. 189).
Since at least 1970, the benefits of support programs have shifted in the direction of the largest, most efficient farmers at the expense of numerous small farmers (Penn and Boehm, 1978, p. 6; Lee, 1983, p. 10; Peters, 1982). This is a form of reallocation because, apart from pleasing rural voters, members of Congress want the nation to have a strong agricultural sector to help ensure that Americans eat well at low cost. But such goals are better achieved by rewarding the most efficient farmers than by rewarding the most farmers. One consequence of redistricting may come to be the disappearance of the Jeffersonian yeomanry.

No longer are rural residents the sole beneficiaries of agricultural legislation, which now is concerned with cost to consumers, soil conservation, land use, environmental damage, income relief, dietary goals, and foreign aid. At the same time, agriculture bills have been logrolled with legislation that serves metropolitan interests (Ferejohn, 1985). The Food and Agriculture Act of 1965 received urban support in return for rural support of Right-to-Work repeal (Anderson, Brady, and Bullock, 1978, p. 371). After the Food Stamp Program was incorporated in the Agriculture Act of 1970, the Agriculture and Consumer Protection Act of 1973 provided food stamps for strikers and was logrolled with an increase in the minimum wage. The 1977 Food and Agriculture Act eliminated the purchase requirement for food stamps and included separate titles devoted to Food for Peace and nutrition education. And as shown in section 1, more and more metropolitan appropriations have been incorporated in the appropriations act for the Department of Agriculture since the 1960s.

How the new metropolitan majority has affected agriculture policy can be seen with a close look at the passage of the 1977 Act (see Peters, 1978). Chairman Thomas Foley (D-WA) characteristically allowed the proposal of floor amendments to his House Agriculture Committee’s carefully crafted omnibus bill. In response to depressed wheat prices, declining credit, and a bumper wheat crop, Representative Glenn English (D-OK) offered an amendment to increase wheat supports. A coalition of relatively junior reform Democrats supported the amendment out of solidarity with their fellows on Agriculture; reciprocity was, of course, expected. The Consumer Federation of America also supported the amendment, but demanded support for the Consumer Protection Agency. The amendment passed—but only through a trade with nonagricultural interests.

As chairman of the Subcommittee on Domestic Marketing, Consumer Relations, and Nutrition, Frederick W. Richmond (D-NY) steered a separate food-stamp title, which eliminated the purchase requirement, through the entire legislative process. This title received rural support in the full committee, and the bill as a whole received urban support on the floor. “We did build up a very good working urban-rural coalition,” said Richmond. “It was my job to convince urban members of Congress to support the family farmer and convince rural members to support cities” (Cindy Montgomery, “Richmond Backs Rural Interests,” Lincoln Journal, 24 August 1977, p. 28).

Representative Steven Symms (R-ID) offered an amendment, generally fa-
vored by rural members, to require some payment for food stamps. The Richmond coalition held: only 28 rural members voted for the Symms amendment, which failed. Also generally favored by rural representatives, an amendment by Richard Kelley (R-FL) to eliminate food stamps for strikers failed as well: nearly half the representatives of rural and mixed districts voted against the amendment (Peters, 1978, p. 28, Table 1). Dawson Mathis (D-GA), chairman of the Subcommittee on Oilseeds and Rice and the representative of a peanut-producing district, had planned to offer an amendment empowering the secretary of agriculture to implement any number of pilot projects in which food-stamp recipients would be put to work. He dropped this amendment when Richmond successfully killed another amendment, by Margaret Heckler (R-MA), that would have reduced the peanut subsidy. In the end, the omnibus bill was supported by 70 percent of lawmakers from urban districts and 60 percent of those from suburban districts (Peters, 1978, p. 28, Table 1).

This legislative history was partly repeated for the Agriculture and Food Act of 1981. Richmond again led an urban-rural coalition in passing the House version, which extended the Food Stamp Program and provided higher support levels than the version passed by the newly Republican Senate, which had partly acceded to President Reagan's demand for budget stringency. The conference version, which cut spending on many programs, lost some urban support but received considerable conservative support; nearly half of all suburban representatives voted for it (Peters, 1982, p. 167, Table 2).

*Regulatory Policy*

Since the late 1960s, new environmental, health, safety, and consumer regulations have been enacted and moribund agencies reinvigorated. Weingast (1978, 1980) explains this development as the result of new interest groups pressing their demands. But why did consumer and environmental groups emerge as organized interests in the late 1960s and quickly gain standing before Congress and the bureaucracy over the opposition of entrenched industry interests?

Our explanation begins with the observation that the emergent interests were predominantly nonrural. In transferring political power from rural to metropolitan areas, redistricting was the enzyme for the organization of consumer and environmental interests. Beyond the outpouring of consumer and environmental regulation, regulatory procedures were amended to give these interests standing before the bureaucracy. For example, the National Environmental Policy Act of 1969 requires federal agencies to solicit the objections of environmental groups before any action can be taken. The congressional oversight network was extended to accommodate these and other nonrural interests (McCubbins and Schwartz, 1984), and each new piece of legislation provided elaborate procedures to enfranchise the new interests in regulatory decision making (McCubbins, 1985).
Transportation

Before Baker v. Carr, transportation policy was designed to provide cross-subsidies, ensuring that transportation was available to residents of sparsely populated areas at near the rates paid by residents of densely populated areas. For ground transportation, the Interstate Commerce Act of 1887 and subsequent legislation gave the Interstate Commerce Commission control over rates and routes and encouraged the commission to hold down rates and establish routes for unprofitable rural destinations. Since redistricting, the trend has gone the other way. The National Railroad Passenger Act of 1971 and the Regional Rail Reorganization Act of 1973 replaced cross-subsidies with general-revenue subsidies. Subsequent acts have "deregulated" ground transportation and encouraged competition by giving railroads greater freedom to set rates and abandon lines (Alexis, 1982; Keeler, 1983, pp. 137–41).

The Civil Aeronautics Act (1936) had also promoted metropolitan-rural cross-subsidies under a cartel arrangement managed by the Civil Aeronautics Board. Deregulation began even before the Airline Deregulation Act of 1978. In 1977 the CAB approved Super Saver fares, and in 1978 it let carriers set fares 10 percent above or 50 percent below CAB standard fares. The 1978 act further allowed the CAB to liberalize route awards. Between 1978 and 1981, weekly departures between small airports declined significantly (Graham, Kaplan, and Sibley, 1983, p. 120). Before deregulation, airline fares were based on distance: they were below cost for short hauls and above cost for long hauls. By 1980 fares varied inversely with both distance and density (Graham et al., 1983, p. 122). Although low-density communities did increase their populations between 1950 and 1980, the increase was no greater in the 1960s than in the 1950s (Keeler, 1984, pp. 114–15), and Bailey and Panzer (1981) found that low-density markets had been sufficiently competitive that regulation was not needed merely to secure service for them.

None of these policy changes can convincingly be explained as a mere attempt to reallocate the social product from rural to metropolitan voters. But since they did have that effect among others, it is not hard to believe that they would have been blocked or watered down had rural representatives maintained their strength in Congress. Having shown that our hypothesized engine of change is at work and having explained its mechanics, we would be surprised if it were not at least partly responsible for these and other instances of policy derustication.

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