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A LONGITUDINAL PUBLIC CHOICE ANALYSIS.

The University of Oklahoma, Ph.D., 1974
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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

MUNICIPAL ENVIRONMENT AND PUBLIC POLICY: A LONGITUDINAL PUBLIC CHOICE ANALYSIS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

WILLIAM LYONS

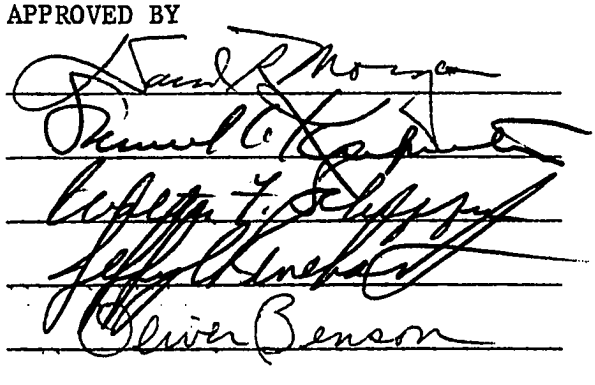
Norman, Oklahoma

1974

MUNICIPAL ENVIRONMENT AND PUBLIC POLICY:

A LONGITUDINAL PUBLIC CHOICE ANALYSIS

APPROVED BY



DISSERTATION COMMITTEE

ACKNOWLEDGEMENTS

I wish to acknowledge the assistance I have received for this dissertation, especially from the Bureau of Government Research of the University of Oklahoma for the provision of computer time and census tapes. I owe a special debt of gratitude to the chairman of my dissertation committee, David R. Morgan, for his patience and guidance during the preparation of this manuscript. Also due special thanks is Samuel A. Kirkpatrick, who provided immeasurable assistance, both prior to and during the preparation of this study. Debbi Barnes and Jo Ann Coulter have my everlasting appreciation for their typing under extreme duress.

Finally, I would like to thank my family, Neva and Laura, for their endless patience throughout this project, as well as my parents, Harold and Helen Lyons, for their continued confidence in my ability to reach this stage.

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CHAPTER I

PUBLIC POLICY AND THE STUDY OF URBAN OUTPUTS

Introduction

The task of this study is to arrive at a systematic view of the urban political system and its allocation of public resources through expenditures. It is necessary to focus upon policy literature from three allied subfields of political science: (1) state policy analysis, because of its advanced state of development and ultimate consideration in later explanatory models; (2) urban policy analysis, in order to note major concerns and elaborate upon variables of major interest to this study, the question of varying political structures, their correlates, and their performance over time; and (3) the study of municipal expenditures as measures of urban performance.

Following a focus upon relevant literature, an examination of the present theoretical basis for policy analysis will be necessary, including an overview of models presently employed, their use, and possible alternative models considered. Following is a description of hypotheses and research proposals to be employed, a presentation of findings, and an integration of these findings into the body of policy research.

State Policy Analysis: Toward Testable Models

Actual policy analysis in political science has been incorporated in the field of comparative state politics previous to the evolution of a comparative urban framework, and in fact many of the breakthroughs made

at the state level are yet to be applied to urban policy analysis. For this reason it is necessary to focus upon the effects of Easton's plea for systematic policy analysis, first on the state, then on the urban fields.

Early Comparative Research in Comparative State Policy

Research in state policy analysis during the fifties and early sixties tended to set the framework for testing the relationships outlined by Easton in 1954,[1] as linkages between various political systems concerns and the ecological (socio-economic) environment were at last considered. Main political system concerns were interparty competition, turnout, and apportionment (which was never particularly useful as an explanatory device and virtually eliminated from study following Baker vs. Carr).[2] Lester Milbrath attempted to explain covariation between the first two variables:

> Political interest tends to rise in an environment with competitive parties, not only because more stimuli are available for consumption, but also because interest rises with increasing conflict. Furthermore, in a close contest, voters are more likely to perceive that their votes count, and thus they are more likely to cast them.[3]

This atmosphere of competition was found (1958) to have definite socio-economic roots, with significant correlations found between competition and wealth, urbanism, and industrialization.[4] For the most part, however, this formative period in state policy analysis was marked by attempts to connect political system characteristics with state policy outcomes. Thomas Dye points out that prior to the groundbreaking of 1963, two studies stand out in their establishment of this linkage.

> In his Southern Politics, Key finds that states with loose multifactional systems and less continuity of competition tend to pursue conservative policies on behalf of upper socio-economic interests. In states with cohesive and more continuous factions more liberal policies are pursued in behalf of less affluent interests. Duane Lockard observed that . . . two party states in contrast to one party states . . . received a larger part of their revenue from business and death taxes, spent more on welfare services . . . and were better apportioned.[5]

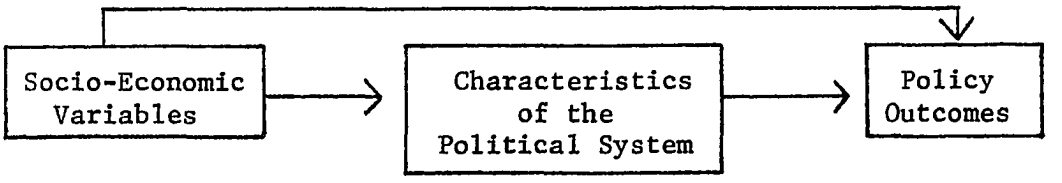
These studies are noteworthy for their comparative nature as well as for their substantive policy conclusions. Each, however, is regional in scope. They serve as interesting transition points between impressionistic case studies and systematic comparative analysis. Dye indicates that to this point (including these works) no "controlling" of "economic" for the effect of "political" variables, or "political" for "economic effect" is performed.[6] This failure to root out spurious causation is taken up by state policy studies of the following generation, considered next.

The Systematic Study of Comparative State Politics

Thomas Dye (1966) was probably the first to attempt a model[7] for the general policy process under the rubric of state systems analysis. Dye categorizes "model" for his purposes as " . . . an abstraction or representation of political life."[8] Major linkages to be considered become clear as Dye phrases the question "Do systems characteristics mediate between socio-economic inputs and policy outputs?"[9] Here Dye sets the context of much policy work in both the state and urban fields, as he outlines an empirical model rather than a normative or prescriptive model. In other words, only determinants of a particular policy are examined. Dye makes a strong case for an economic approach, i.e., determining public policy,

paralleling economic growth, and the need for societal (governmental) regulation. In the study of comparative politics economic development is a key explanatory variable in studying governmental system types and policies.[10] Such a comparative approach is desirable, Dye argues, for the fifty states. Basically the Dye approach will test the viability of the arrows in Figure 1-1.

Figure 1-1.--The Dye Policy Model



Probably the first analysis to implicitly make use of the comparative approach offered by Dye took place three years prior (1963) with Dawson and Robinson's "Interparty Competition, Economic Variables, and Welfare Policies in the American States."[12] This study was the first truly comparative state policy study. Their conclusions set into motion the battle of the arrows of Dye's model. The question is "Are socio-economic influences more important in policy determination than political system variables?" Dawson and Robinson concluded that the former are more important, at least in the area of welfare policies.[13]

Thomas Dye's work shows conclusions which parallel those of Dawson and Robinson, suggesting that " . . . system characteristics have relatively

little independent effect on policy outcomes in the states."[14] Dye's validation is accomplished by the use of multiple partial techniques, showing the percentage of explained variance first controlling for all political variables, then all socio-economic variables.

Ira Sharkansky's Spending in the American States further utilized the methodological advances made in the middle sixties. Sharkansky's dependent variables were government action variables (output variables) measuring state spending. Government spending was found to be inversely related to population, industrialization, and density. Sharkansky concluded that governmental (system) variables seemed to have little independent effect upon expenditure levels, except for the "assignment" variable, which operationalizes the amount of expenditures implemented at the state versus local level. Also a strong incremental effect was discovered, that is, the previous years expenditure tended to be the base predictor of a given expenditure.[15]

Sharkansky, working with Richard Hofferbert in "Dimensions of State Politics, Economics, and Public Policy,"[16] written in 1969, demonstrated the further methodological sophistication of factor scoring techniques, allowing for a parsimonious analysis of political and socio-economic dimensions of policy.[17] This work merits further discussion because the tenor of previous findings is challenged.

> Because we deal with factors and not isolated variables, we can speak with improved precision of which "dimensions" of policy correspond to what "dimensions" of politics and economics.[18]

In a methodological note the authors confront possible criticisms that (1) they are using factor analysis in lieu of theory, and (2) their factors do not truly make sense. After demonstrating the validity of their

methodology, Sharkansky and Hofferbert arrive at a series of factor scores for use as socio-economic (input in the Sharkansky terminology) system characteristics, and expenditures (outputs). The two environmental factors are "affluence" and "industrialization." The two political system factors are "professionalism-local reliance" and "competition turnout." The former suggests that states making heavy use of intergovernmental assistance have judicial and legislative institutions that are less well-developed than average.[18] The latter factor, "competition/turnout," is self-explanatory. When output, or policy measures, are factor analyzed the dimensions emerging are labeled "Welfare-Education" and "Highways, Natural Resources." The authors, at this point, were able to proceed with an analysis of the inter-relationships of these three sets of factors. They found "Welfare-Education" to be dependent upon Competition/Turnout, while the Highway-Natural Resources measure was dependent upon economic factors.[19]

The significance of this study can be summarized by the author's statement:

> The single most important finding of this article may be its emphasis upon multidimensionality in state economics, politics, and public policy. There is no single answer to the question "Is it politics or economics that has the greatest impact upon public policy?"[20]

Sharkansky operationalizes yet another element of his public policy model. Outputs (expenditures) are related not so much to environmental variables, but with actual effects (in a cause-effect sense) or as Sharkansky labels them, policy impacts. In this study actual measures of public service impact are the dependent variables, such as actual teacher-pupil ratios, percentage passing Selective Service mental exams, etc.[21] However,

his findings indicate that there are no significant relationships between spending items as independent variables and service measures, and Sharkansky even adds the time dimension albeit without empirical verification, to his conclusion.

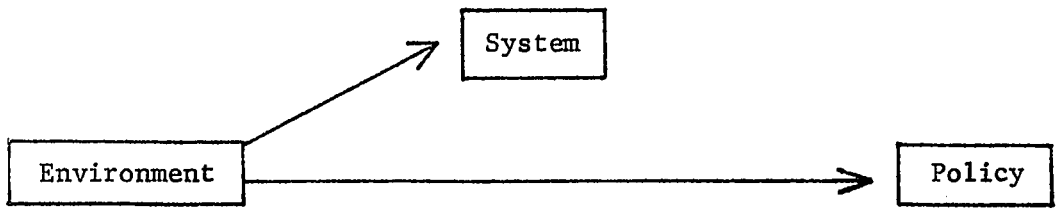
> The data here only warn that gross levels of spending do not reflect service levels, and that gross increases in spending are not likely to produce early gross improvements in service.[22]

Richard Hofferbert was the first to systematically analyze the dynamics of policy change, working from the premise that states are becoming increasingly similar over dimensions of ecology (socio-economic environmental variables) and actual policy.[23] Hofferbert gives great attention to the "black box" labeled "system variables," a concept which he wishes to broaden to include the decision-making process of policy makers. Hofferbert suggests that the reasons for the states becoming more alike through time lie in the communications between state policy makers and the advent of massive intergovernmental aid and concludes that as states develop to a certain point, leaders are allowed more lattitude, and it is in the perceptions of policy makers that policy analysts should look for unexplained variance in policy dependent variables.[24]

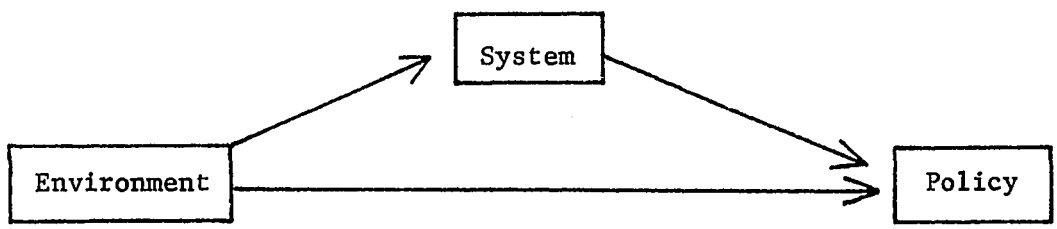
Thomas Dye (1972) summarizes this phase of the study of state policy. All possible models of the policy process are eliminated from consideration save the following two (see Figure 1-2). In other words, the only questionable relationship is between system and policy. Dye goes on to note that his analysis suggests eight propositions, paraphrased here.

Figure 1-2.--Two Hypothetical Policy Models

Environmental Model



Hybrid Environmental Model



(1) When government taxing, spending, and service levels are studied as dependent variables, economic development, especially per capita personal income, rates as the single most important environmental variable.

(2) Federal grants-in-aid help free state and local governments from environmental (ecological) dependence.

(3) While wealth and education have maintained a high level of predictive significance, industrialization is receding in usefulness. It takes federal governmental action to reduce such environmental determinism.

(4) While early literature suggested the importance of political system variables such as interparty competition, malapportionment, and voter participation, one now can see these as, at best, intervening variables between the environment and policy; in fact, such political variables can often be viewed as products of the environment.

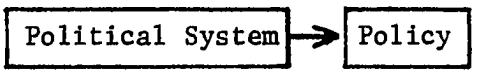
(5) While the theories of pluralism suggest that the political variables mentioned above are important as policy determinants, it seems impossible to consider the effect of these apart from the fact that competitive states are also high in turnout.

(6) The same can be said of reformism as of pluralism, for as it is associated with higher taxing, spending, and service, so is it associated with wealth and urbanization.

(7) Multivariate analysis shows that environmental variables explain the most variance, followed by reformism, then pluralism.

(8) Environment can affect policy both directly and indirectly through system characteristics.[26]

Expansion of the Policy Model

Two studies are worthy of note in which independent variables are indicators of political system effects and characteristics. The first work deals with the latent function of the state, at least in an economic system such as that of the United States, in which the governmental system is charged with reallocating resources misallocated by economic forces. Brian F. Fry and Richard Winters, in "The Politics of Redistribution," attempt to measure policy outputs, with political system variables as main independent variables.[27] The authors note that previous research has found that "levels" of spending are more related to socio-economic than to political system variables, and posit that other dimensions of policy analysis might show a strengthening of the 

arrow as discussed by Dye.

> To examine this proposition empirically our study shifts attention to the allocation of the burdens and benefits of state revenue and expenditure policy across income classes. In redirecting analysis to allocations rather than levels of state revenue and expenditures, we focus on a province we believe to be more predictively political.[28]

The success of the Fry and Winters effort depends upon a successful operationalization of the dependent variable, or a devising of a measure of comparative redistributive impact. The dependent variable was calculated as follows.

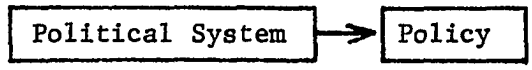
(1) Compute amounts paid (revenue) and amounts received (benefits) by income class.[29]

(2) Calculate ratio of benefits received to revenues paid out to each class.[30]

The previous computation is somewhat limited by the fact that only national figures are used as the base for allocation scales described in note 30.

Independent variables used here are median family income, industrialization, urbanization, and other socio-economic indicators, with the addition of the Gini index of income inequality. Political independent variables include participation, democratic vote, interparty competition, and legislative inducements to participation. As a gesture to more traditional analysis, malapportionment variables are included, as are three measures of elite behavior.

Findings indicate that the authors' initial hypothesis is confirmed, that is, in predicting redistributive policies political system indicators prove more useful than socio-economic indicators. Percent of explained variance is 50 percent for all states, and 66 percent for non-southern states.[31]

Another 

arrow is tested in Jack Walker's "The Diffusion of Innovations Among the American States." Here the attempt is to "focus on one of the most fundamental decisions of all, whether to initiate a program in the first place." A state which receives a higher "innovation" score indicates a tendency to respond to policy innovation.[32] Both socio-economic and political system variables are useful in explaining the innovation score variation. Furthermore, one political system variable stands out indicating that states with higher "urban representation" tend to adopt new programs

> because they are bigger, richer, more urban, more industrial, have more fluidity and turnover in their political system and have legislatures which more adequately represent their cities.[33]

This last variable, an apportionment measure, Walker points out, has previously proven insignificant in indicating expenditure patterns. Walker adds the observation that operationalizing the black box of the actual policy making process (the decision makers) depends on the micro environment of policy choice. State leaders often choose to compete only regionally. Thus Walker concludes

> Emerging from this study is the picture of a national system of emulation and competition. The states are grouped into regions based on both geographical contiguity and their place in the specialized set of communication channels through which flow new ideas, information, and policy cues.[34]

Walker's study highlights the complexity of comparative policy studies, and presents a viable rationale for the use of a regional explanatory variable, not merely to indicate environmental similarities, but also to indicate micro boundaries for the perceptual environments of actual policy makers.

State Policy Analysis: Conclusions

Although early indications seemed to cast doubt upon the validity of political variables as having a meaningful effect upon actual policy, later expansions made by Walker and Fry and Winters show the value of political indicators when basic dependent variables are developed, in this case, redistribution and innovation, which demonstrate a residual of explanation beyond mere socio-economic determinism. This, coupled with the dynamic element added by Hofferbert and Walker, which notes behavioral dimensions of policy based upon choice making by decision-makers in light of regional norms, provides inspiration to the hypothesis implicit in all

political policy study: that political system variation is connected to policy output. Unfortunately, neither the advances described above nor the methodological developments described previously have been adequately adapted to the study of urban policy.

Ethos and Urban Politics

A good part of the political system-related urban policy analysis takes root in the provocative "ethos" thesis which Edward Banfield and James Q. Wilson resurrect from Richard Hofstader's The Age of Reform[35] and develop in their City Politics.[36]

The ethos theory is envisioned by Banfield and Wilson as an explanatory construct. Electoral decision-making is the dependent variable, with the electorate dichotomized into two camps, each with a culturally determined world view, labeled "private regarding" or "public regarding." The latter group is noted for its tendency to put the perceived well-being of the community first when voting or otherwise entering politics, while the former acts on cue from a narrowly conceived notion of personal or primary group benefit.[37] Accordingly,

> The Anglo-Saxon Protestant middle class style of politics, with its emphasis on the individual to participate in public affairs and to seek the good of the community "as a whole" (which implies among other things the necessity of honesty, impartiality, and efficiency) was fundamentally incompatible with the immigrants' style of politics, which took no account of the community.[38]

Although assimilation into American society seems to ameliorate Jewish private regardedness, groups other than Protestants and Jews retain their ethos through the third generation. Banfield and Wilson contend that

this split often summarizes other political cleavages, such as political parties, the haves and the have-nots, and the suburb and central city battle lines. Private regarding citizens tend to look to politicians for favors and patronage, and are tolerant of "corruption," while public regarding citizens are usually concerned with honest and "efficient" government.[39]

Banfield and Wilson also tie the emergence of the "reform" movement to the reformers desire to return control of local political institutions to elites with a public regarding outlook. Businesslike management of resources was sought. Reform manifestations usually include nonpartisan elections, the council manager form of government, at-large elections, large city planning expenditures and widespread civil service coverage of local government employment, or in general, all things associated with a dismantling of machine government. Thus ethos is introduced as a concept capturing much of the underlying cleavage and conflict of urban politics, lying near the heart of the reform movement, and having certain regular manifestations in systems of local elections and personnel management.[40]

The proof of the actual existence of the ethos as formulated here must be found in the attitude structure of the populace. Banfield and Wilson in "Public Regardedness as a Value Premise in Voting Behavior," undertake, with little concern for the ecological fallacy,[41] an examination of citizen voting behavior in a variety of wards and precincts in local elections in selected cities. Elections with subjects that Banfield and Wilson presume have easily discernable determination of "who benefits" are subject to analysis. The authors utilize as independent variable "percent ethnic" composition of voting precincts, and as dependent variable "percent yes" votes cast on various expenditure and bond issues,[42] concluding that:

> . . . voters in some income and ethnic groups are more likely than voters in others to take a public regarding rather than a narrowly self interested view of things.[43]

It is not only income, but ethnicity that underlies this phenomenon, and this stems from "participation in a subculture that is identifiable in ethnic and income terms.[44]

Although the ethos concept has not been without criticism as indicated later, Banfield and Wilson's basic hypothesis is self-substantiated in "Political Ethos Revisited."[45] Here the ethos theory is again confirmed, mainly in reaction to methodological shortcomings inherent in their previous work. First, all concern with historical foundations for the "ethos" is disclaimed; secondly, the ethos' are renamed "unitary" and "individualist," paralleling the prior public and private regardedness patterns. Then the ethos assumptions are tested by a survey sample in Boston, and conclusions follow those at the higher level of aggregation in their previous work. Individualists possess a localistic ethos; unitarists possess a "holistic" ethos, with Anglo Saxon Yankees and Jews tending toward the latter, and ethnics the former, with Jews somewhat less unitaristic than Yankees.[46]

It is the suggested relationship between ethos and form of government which is mentioned in City Politics,[47] then left largely undeveloped, that took root in urban policy analysis inspired by the Banfield and Wilson research. Their contentions about specific ethnic referenda results are left largely unchallenged.

Ethos and Urban Governmental Forms

Wolfinger and Field attempt to test what they consider a major hypothesis of the Banfield andWilson work, that " . . . a number of political

forms and policies are a manifestation of each ethos."[48] In making such an investigation they discuss the need to clarify some hazy implications of the Banfield and Wilson work. (a) Is the independent variable class or ethnicity? Banfield and Wilson interchange the two repeatedly. (b) If the immigrants created an ethos of "private regardedness" in response to conditions here, shouldn't this ethos vary with region of the country, or to the differing sets of experiences encountered in different areas?[49]

> In particular, since the quality of the immigrant experience differed from region to region, it appears that a particular level of foreign stock population, in, say California or New York might produce different levels of private regardedness in two places.[50]

The authors cite Kessel, Schnore and Alfred, and Cutright[51] as substantiating the ethos theory, but accuse them of ignoring "region." Wolfinger and Field take as their independent variables (1) percent foreign born; (2) class, percent white collar, median income, and education; and (3) region, in their testing of the viability of "ethos" as explaining governmental forms. Dependent variables are shown in Table 1-1.

The study included all cities over 50,000 (1960), (n = 309) except Washington, D.C. They conclude that there is a "public regarding" syndrome in some American cities, but that relationships between all independent and dependent variables disappear when cities are examined "within regions." No strong case can be made in any case for any structural "private regarded" ethos, as private regarding forms do co-occur with the regularity of public regarding forms. As a whole, Wolfinger and Field conclude that whatever is left of the ethos theory can be considered a regional artifact. In any case, the Banfield and Wilson thesis is characterized as in need of revision.[63]

Table 1-1.--Wolfinger and Field's Ethos Categories of Political Structures

Political Structures	Private Regarding	Public Regarding
Form of Government	Mayor	Manager
Type of Ballot	Partisan	Non Partisan
Method of Electing Councilmen	Wards	At Large
Size of Council Districts	Small	Large
Civil Service Coverage	Less	More
City Planning Expenditures	Low	High
Urban Renewal	Low	High

Robert Lineberry and Edmund Fowler attack such a dismissal of the ethos theory. Another dimension is here added, that of actual behavior of cities.

> It is our thesis that governments which are products of the reform movement behave differently from those which have unreformed institutions, even if the socio-economic composition of their populations may be similar.[54]

Methodologically two vast improvements can be seen in the Lineberry and Fowler study: (1) reformism is viewed as a "continuous" independent variable, and (2) specific testable hypotheses are offered concerning the findings of the dependent variable.[55] Specifically, the hypothesis is offered that "reformed governments differ from their unreformed counterparts in their responsiveness to socio-economic cleavages in the population."[56]

Dependent variables are taxes and expenditures. Lineberry and Fowler conclude that the linkage from socio-economic inputs to expenditures and tax outputs is clearer in unreformed cities. According to the authors, the cleavages and demands of the urban political system are more readily translated into policy outputs (as shown in taxing, spending figures) in unreformed than in reformed cities.[57] The idea that the occurance of such forms is an artifact of region is dismissed out of hand. One cannot, according to Lineberry and Fowler, control for region for it represents a potpourri of cultural and historical factors. In any case there has been a not so subtle shift of emphasis between these two pieces, and both represent a takeoff from the Hofstader Banfield and Wilson discussions. Whereas Banfield and Wilson establish an ethos underlying urban political cleavages, Wolfinger and Field do not so much detract from its viability as an explanatory construct as they imply, but establish its causal roots in regional variation in the United States. Lineberry and Fowler fail to address either the ethos existence or its causal roots, but establish the fact that governmental forms and personnel policies mentioned by Banfield and Wilson, and later Wolfinger and Field, are structural manifestations of the ethos respond differently to the urban political environment.[58]

Governmental Form as Dependent Variable

A body of urban policy investigation seeks to establish a systematic relationship between characteristics of cities and use of political structures. Phillips Cutright in "Non-Partisan Electoral Systems" makes use of two sets of independent variables: (a) the state political system, and (b) social class and religion of the city, with the dependent variable

the partisanship of local community electoral systems (cities over 25,000 1963). Cutright finds that weak party attachments in one party states are associated with non-partisanship. When state environments showed a competititve party structure the social variables of the cities became a determinant factor in the incidence of reformed structures.[59] The social and economic indicators of cleavage operated most fully in combination (high on both indicators), and only when one indicator was low was there a significant variation in non-partisanship indicated by the other. Thus the action of the independent variables (state political environment) and (social and economic cleavages) seems somewhat interactive. Cutright concludes:

> . . . non-partisan elections are associated with several structural conditions: (1) overwhelming voter support to one party; (2) weak voter attachment to either party; (3) lack of an economic base which encourages class based organizations and class alignments to political parties; and (4) lack of a religious base adequate for religious cleavage to adequately support political parties. Where these conditions occur, non-partisan systems have won overwhelming support in the absence of these conditions the ride of reform has had noticeable less effect. Further, where these conditions combine, a one party system may become relatively permanent features on the political scene.[60]

John H. Kessel adds the independent variables of city size and city growth rate, grouping cities into (a) 10,000-25,000 population; (b) 25,000-250,000; and (c) cities over 250,000. The advent of the council-manager form is latest in time and is associated with the reform movement. Kessel found that in population growth and governmental form, the manager city tends to be "growing," the mayor cities stable, and the commission form is found in those cities declining in population. Also, the manager

cities (much like Cutright's non-partisan cities) tend to occur in states with either one party or weak two party structures. Measures of class cleavage show an association with the mayor council form. Here percent foreign born taps those people most likely to utilize unreformed structures. Again conclusions as to economic base and governmental form are similar to Cutright.[62] Kessel concludes in a programatic vein:

> . . . given the adoptions and abandonments of the past fifty years each governmental form will be most frequently found in that environment which is congenial to it.[63]

Alford and Scoble likewise view a city as tending toward the form of government most suitable to its needs, though many times insurmountable obstacles may exist in the state legal environment. Like Kessel, cities over 25,000 (1960) are studied. Independent variables are: (1) social heterogeniety of the population; (2) class composition; and (3) population growth and mobility.[64] With cities expected to favor a professionalized, managerial, reform government with increases in the three above, Alford and Scoble summarize:

> White, Anglo Saxon, Protestant growing and mobile cities are highly likely to be manager cities; ethnically and religiously diverse, but non-mobile industrial cities are likely to be mayor-council cities. The commission form is associated with declining population, low mobility, a low white-collar composition, and a low educational level and low ethnic and religious diversity.[65]

Thus Alford and Scobles' conclusions, using government form as dependent variable, parallel those of Cutright and Kessel, as do Schnore and Alford in a similar study of American suburbs. Here higher proportions of foreign born are found in mayor-countil cities[66] and the tendency of suburbs is to possess manager forms of government.[67]

Governmental Form and Output

Governmental forms can be considered as intervening variables, much in the vein of Lineberry and Fowler, when one wishes to treat some manifestation of governmental output as dependent variable. There are obvious problems in finding meaningful operational definitions of output.[68] Two studies have attempted, albeit on a limited population of cities, to study expenditure levels of cities in relation to governmental structure independent variables. Edgar Sherbenou, in examining Chicago suburbs, found that reformed structures provided a more classically "efficient" translation of resources into expenditure output,[69] while Bernard Booms, studying cities in Michigan and Ohio, finds a similar "efficiency."[70]

Richard Cole uses a valuable methodological treatment of the structural variables listed by Banfield and Wilson and Wolfinger and Field. Cole uses the governmental form variables as independent variables, while treating the personnel items (employees covered by civil service, per capita city planning expenditures, and per capita urban renewal requests) as dependent.[71] The author, rather than utilizing a "continuous" index of reformism (e.g., Lineberry and Fowler), divides the concept into four control groups ranging from least to most reformed, and performing an analysis of variance technique[72] finds: (1) political structure is a very weak predictor of public policy and while region is of slightly greater predictive significance, it too is of minimal importance in predicting the behavior of the dependent variables. Cole concludes that a very complex model is necessary in accounting for urban policy outputs.

In a study similar in concern to that of Lineberry and Fowler, Terry Clark sought to add the dimension of community decision-making

centralization to a model testing performance of reformed versus unreformed structures and variation in budget expenditures for a sample of fifty-one American cities.[73] In order to operationalize concepts of "decentralized community structure," Clark, in a methodological first for basically aggregate studies, utilized questionnaire data. His findings show similarities to those of Lineberry and Fowler. Decentralized, or "pluralistic"[74] structures of decision-making are found in ethnic, industrial cities, which tend to spend more than their centralized counterparts.[75] The most important single explanatory variable in the Clark study is percent Catholic, as Catholic cities show correspondingly higher expenditures on all items.[76]

Clark's analysis highlights the fact that "public regarding" ethos, reformism, and centralization of decision-making structures all tap the same dimension, and that pluralistic structures tend to occur in unreformed cities.

> Decentralized decision-making was positively associated with economic diversification and population size . . . and negatively associated with index of reform government.[77]

Thus the elements of contention from both the reform literature and community power literature, can in a sense be fused into a single set of concerns: the incidence and performance of "efficient" versus basically "democratic" ethos. What appears lacking in the literature is systematic, comparative, aggregate studies, especially with inclusion of the time factor in dealing with policy outputs.

One can note, however, the overriding interest in the effect of reformed versus unreformed structures. The existence of the two corresponding

ethos is unquestionable; gauging their importance begets controversy; however, measures of output are lacking in sophistication. Unfortunately, comparative, systematic studies of urban policy, containing the temporal aspect discussed above, lack consideration of political indicators.

Thus the Banfield and Wilson thesis that ethos is a useful explanatory device underlying the urban political system is not challenged by the ensuing study of urban forms and policy. Wolfinger and Field merely jab at any prior cause other than regional variation. Other works make a clear case for the existance of reformed and unreformed governmental structures according to the social and political environment of the area. Where cleavages exist (social, religious, and economic) and state environments show strong two party competition, also an indicator of socio-economic cleavage, then the mayor-council form predominates. Though not as efficient in the "business" sense as the manager form, mayor-council cities are more "efficient" as translators of environmental conditions into policy. (Here one cannot necessarily refer to the former as demands, or truly compare policy on any other than a gross level.) However, when one attempts even a rudimentary breakdown of policy items beyond mere per capita expenditures (Cole) structural variations lose much explanatory signifigance.

Municipal Expenditure Analysis

A great deal of analysis has taken place concerning the determinant factors of municipal spending. However, since the bulk of such literature has been done by economists inclusion of political explanatory variables,

especially those germane to the effects of governmental forms, has been extremely light.

The determination of factors underlying comparative state and municipal spending has been labeled "the aggregate approach" in the analysis of all budgeting decisions. Meltsner and Wildavsky characterize this approach as its objective

> . . . to develop an empirical theory of the determinants of municipal expenditures using multiple regression analysis. The theory as such is therefore contained in the choice of the independent variables which, when their effects are added together, purports to explain much of the variance in city expenditures from one city to another.[78]

Meltsner and Wildavsky further claim that inherent in aggregate expenditures studies are three assumptions:

> (a) Per capita wealth is converted into demands for public services.
> (b) The service demands filter through a seive known as politics.
> (c) The expenditures incurred satisfy these demands.[79]

It is the contention of this volume that the summation offered by Meltsner and Wildavsky lumps aggregate studies into a model resembling that of Thomas Dye (discussed previously in this chapter).[80] The importance of political variables is limited, and tangential to the bulk of economic expenditure literature, which, if subject to any "model" seems fit for classical economic public choice models, rather than those of Easton and Dye (see Chapter 2). This section will consider the literature of local government finance, with greatest attention given the literature most germane to this study: those works including political variables and/or those utilizing time series approaches.

General Studies: Determinants of Metropolitan Expenditures

Any analysis of public expenditures must take note of Solomon Fabricant's Trends of Government Activity in the United States Since 1900.[81] Although the scope of the Fabricant study far exceeds the demands of this section, his systematic comparative method was indeed trend-setting, as was his choice of three main explanatory variables of income, urbanization, and population density, with personal income the best single predictor (Fabricant's expenditure variables were broken down into per capita expenditure per functional category, as well as total per capita operating expenses).[82] Fabricant's study dealt with all levels of government expenditure (federal, state, and local); however, his consideration of local government expenditures is somewhat weakened by his aggregation of local expenditures to the state unit of analysis. Changes in the wealth variable over time are offered as the major determinant of variation in this local expenditure variable. He concludes:

> . . . the chief cause of rising per capita expenditures would be rising income. Greater urbanization and the "passage of time" would add a little. Increased density would subtract a little.[83]

The limiting factor in the Fabricant work is obviously the lack of sophisticated data management techniques, for temporal analysis is limited to speculation based on comparative correlation coefficients, and actual measures of the dependent variables are by statewise averages.

Seven years later Harvey Brazer attempted a similar study to Fabricant's, utilizing a narrower scope of concerns (local government expenditures only) with a consideration of individual cities; Brazer utilized 462 cities with populations of 25,000 (1950). The results

of this study set the tone for much continued work, as Brazer found a difficult time accounting for the tremendous variations he encountered,[84] but utilizing the Fabricant independent variables he found a like correlation between them and functional expenditures. Also added were population growth, and proportion of the city's share of the total metropolitan area population.[85]

Stevens and Schmandt, analyzing, like Fabricant, state aggregates of local expenditures add region as an independent variable. Revenue raising was also explicitly added to the model, as was consideration of revenue sources. Utilizing 1957 data[86] the authors concluded:

> (1) Total revenues, property taxes, and state aid form a cluster of interrelated variables that tend to move in the same direction.
> (2) Wealth (ability to pay; median income) is a critical determinant of per capita revenue.
> (3) State aid to local governments declines as size and density increase.[87]

Stephens and Schmandt further note that the Pacific region is characterized by high income and revenue; the mountains have the highest property tax and locally raised revenue, while New England is most dependent upon property tax and least on state aid. Further, total revenue and property taxes manifest a curvilinear relationship to population size, with lowest revenue per capita in medium sized counties. Wealth and state fiscal policies appear as more influential determinants of revenue patterns than demographic characteristics.[88]

Kurnov again makes use of the state by state aggregate analysis, and in an expansion of the Stephens and Schmandt findings adds per capita federal aid, while considering urbanization without density. Also new is

Kurnov's inclusion of the state pupil-teacher ratio as an output measure.[89] A year later Fisher, utilizing the same set of dependent variables (aggregate local expenditures at the state level) expands on the Kurnov inclusion of the federal aid variable.[90] Further methodological sophistication is indicated by his use of multiple partials.[91] Fisher discovers a high negative association between expenditure levels and the percentage of low-income families in the state, which suggests to him the hypothesis that there is a political resistance to increased government expenditures among low income persons.[92] (This seems an exceptional example of bizarre conclusions from preliminary data analysis). Also, and of great importance is his note that multiple partials show the greater importance of demographic factors than beta coefficient analysis had indicated.[93] Fisher also included two socio-political variables: (1) an index of party competition, and (2) percent of those over twenty-five with less than five years of school, and finds that

> The two socio-political variables contributed less to the levels of correlation obtained than did the economic and demographic factors, but show indications in expenditures for highways, sewers, and health and hospitals.[94]

Although somewhat crude in his assessment of "political" considerations, Fisher was nonetheless the first writer in either economics or political science to merge expenditures and at least one legitimate political measure (interparty competition). This data is, unfortunately, collected at state aggregate levels. In this group of general expenditure determinant studies only Brazer has utilized individual city expenditures. Others studies cities in this manner, but on regionally restricted populations.[95]

The most exhaustive study to be here considered is Roy W. Bahl's Metropolitan City Expenditures, which attempts a temporal analysis of 198 central cities of areas defined by the census as standard metropolitan statistical areas. (This unit of analysis allows use of the ratio of central city to outside central city population). Bahl's dependent variables are the usual functional per capita breakdowns, but percentage distributions across each city's total are also given some consideration, albeit outside any predictive model.[96]

Bahl's major concern is with time dimensions[97] of change, as for either 1950 or 1960 alone results fit into patterns similar to those found by Brazer.[98] Bahl, however, does explain somewhat more variance in 1960 than 1950. Regression coefficients, however, remain quite similar. Outstanding in the Bahl analysis is his conclusion, based upon both years data, that

> . . . the single most important indicator of the level of city government spending is per capita intergovernmental revenue. The comparisons also reveal that the more densely populated cities with higher median family incomes spend significantly more. Also, there is general consensus that the capacity to finance, the degree of poverty, and the level of demand for public goods interact to create higher levels of municipal spending.[99]

When actual changes in dependent variables are subject to regression analysis, certain functional expenditures, especially fire, police, and highway expenditures, show interesting correlates of change. Variables valuable as explanatory units include changes in the ratio of central city to metropolitan area population,[100] increases in population density,[101] and population change. However, a large portion of the variation over

time may be subject to price level changes. (Analysis of percentage distribution changes could help negate this problem).[102]

Bahl concludes by noting the importance of certain explanatory variables not incorporated to any extent in research previously cited in this chapter, notably the question of central city--metropolitan area relationships and intergovernmental aid effects. These variables, along with others of singular importance, demand more detailed treatment.

Additional Explanatory Variables: Metropolitan Expenditures

As was noted previously, the trends in expenditure analysis literature cite wealth, density, and income, and Bahl's in depth analysis shows these three to indeed be of continuing use. Also useful is population size. Findings seem to indicate no tendencies toward economies of scale. Berolzheimer gave early indication of this in 1947 with his conclusion that there is a relationship between population size and municipal expencitures.[103] Richard Spangler finds a significant relationship between rate of population growth and per capita expenditures, and hypothesizes that growth, rather than lending to an economies of scale condition, actually manifests a disruptive effect, inhibiting efficiency.[104]

Intergovernmental Aid and Expenditures

Probably the first major dissatisfactions with the initial four part Fabricant-Brazer model of expenditure analysis came from Sacks and Harris in 1964. Their suggestions were not so much to alter the model as to add aid factors to the linear equation. They hypothesize that the greater the intergovernmental flow, the higher the combined state and local expenditures. Again aggregated state totals are analyzed. Sacks

and Harris find their hypothesis most applicable to welfare and highway spending. They suggest adding (1) federal aid; (2) state aid; and (3) federal and state aid to Fabricant's model.[105] Bahl and Saunders seek to apply the federal aid variable to analyze the change component for state aggregated state and local spending, and after attempting to locate various explanatory variables to add to the Fabricant-Brazer model conclude:

> The results of this study reveal that changes in per capita federal grants to states is the only factor which significantly affects changes in state and local per capita spending when data from 48 states are included in a five variable model.[106]

Morss soon pointed out a major flaw in the consideration of intergovernmental aid as depicted by the above authors.

> One purpose of this study is to point out a new variable, which, when used by itself or in conjunction with other variables, will contribute substantially to the explanation of interstate differences.[107]

The variable Morss writes of is per capita state and local tax collections, by state. When this variable is used as na estimator it accounts for 72 percent of the variance. This contribution helps prediction, but as variables underlying the taxation variable are left unspecified, the cause of explanation receives little help. Morss' other contribution, however, is quite useful.

> In short, it appears that the federal aid variable is significant in explaining variations in state and local expenditures only because the lower level governments are required to spend all the federal aid they receive.[108]

Morss' criticism raises methodological problems, as pointed out by Pogue and Sgontz, as they suggest that the same variables enter into both sides of the equation. That is, aid is used to predict to a large

extent its own implementation. They note the biasing effect upon regression coefficients which occurs when parts of dependent variables are analyzed as independent variables.[109] Pogue and Sgontz agree with Morss in their assessment that per capita aid is not a valuable explanatory variable in municipal expenditure analysis.

John Osman, reaffirms the explanatory validity of intergovernmental aid if considered as a "stimulator" of local spending, as in a state by state analysis he discovers that state and local expenditures increase for a given function more than intergovernmental aid to that function.[110]

Urban-Suburban Governmental Fragmentation

Early expenditure studies began a trend of investigating covariations between the nature of the central city-metropolitan area relationship and its effect upon municipal spending. Hawley found an inverse relationship between per capita expenditures and the proportion of people living outside the central city,[111] as did Brazer.[112]

Probably the greatest contribution made to the expenditure model by those investigating fragmentation is provided by a group of Syracuse University scholars, notably Woo Sik Kee[113] and Alan Campbell and Seymour Sacks.[114] Both studies employ a city by city analysis, utilizing a sample of 36 SMSA's. Dependent variables examined are educational and non-educational per capita spending. Valuable explanatory variables become: (1) the ratio of owner occupied homes; (2) ratio of central city to total metropolitan population; and (3) the amount of taxes collected at the local level (percentage of local to total state and local).[115] Kee concludes that the tax assignment variable underlies much expenditure deviation.

> The results of this analysis suggest that the key to understanding the expenditure variations of the nations central cities is the role of the states in delegating responsibility to local units of government.[116]

Campbell and Sacks greatly elaborate on the Woo discoveries. An analysis of taxation patterns finds the central city burdened with physical deterioration and a need for noneducational services, and note that state aid patterns differ markedly according to the recipient (city or suburb). Cities receive more noneducational aid per capita and suburbs more educational aid.[117] Again, the prime indicator in understanding city by city variations is the tax assignment variable, which can be understood in terms of expenditure responsibility, or as usually operationally defined in central cities, responsibility for welfare.[118]

> It is the local expenditure assignment and the amount of state aid that determines, in part, the other assignment variable, tax assignment.[119]

Other intergovernmental aid variables rate consideration.

> It is clear that the intergovernmental flow of funds, as measured by state and federal aid, has a stimulative effect upon state and local fiscal behavior.[120]

While stressing the importance of assignment variables, and criticizing previous researchers for its omission,[121] the authors also address the Brazer-Hawley hypothesis, labeled by Bahl as the "exploitation hypothesis," that the greater the proportion of a SMSA outside a central city, the greater the exploitation of the central city. Campbell and Sacks claim that the phenomenon is more complex than mere "exploitation."

> For if the central city has its noneducation expenditures and taxes increased because of the burden of services imposed upon it by the size of its outside area, the outside area also has

> its level of noneducation expenditures and taxes influenced by the relative size of the central city.[122]

Campbell and Sacks thus caution upon empirical reliance on evidence to document the alleged "exploitation" of the central city by the suburbs. William Neenan, in a case study of Detroit, found "exploitation" by analyzing benefits to the central city,[123] whereas Auld and Cook,[124] and Ramsey[125] criticize the limited parameters of Neenan's work, notably his exclusion of some suburban communities from the analysis and his ignoring of Michigan revenue sharing distributions from wealthy suburban communities to Detroit. Neenan later defends his approach, but notes the difficulties in a systematic analysis of the issue.[126]

The nature of the exploitation, if any, is attacked on the comparative analytic dimension by Bahl by operationalization of concepts indicative of the urban-suburban financial relationship, most notably the nature of the central city as a central shopping district for the metropolitan area, in which case, the central city could receive compensation for other losses associated with suburbanization.

> In general, the larger the value of the employment-population ratio (city employment to city population), the greater the extent that non-residents of the central city commute to work . . . . Among city comparisons of per capita retail sales reveal the degree to which the central city serves as a major shopping facility within the SMSA.[127]

It must be concluded that the nature of the central city to suburban relationship is of great substantive importance to an understanding of municipal policy. Bahl found changes in municipal expenditures from 1950-1960 ". . . significantly and positively correlated with the changes

in the employment-population ratio and per capita retail sales."[128] Bahl labels suburban interaction as "contact," and finds such "contact" related to a drain on municipal expenditures.[129]

It would appear then, that three major additions to the basic Fabricant-Brazer model can be found in the literature: (1) the incidence of federal and state intergovernmental aid to cities; (2) the tax assignment from state to local governments: and (3) the urban-suburban relationship. The seventies may well render the first addition inapplicable, with the changing grant structure and implementation of revenue sharing; however, it must be considered in expenditure analysis to that time.

Municipal Expenditure Literature: Evaluation

The contribution of expenditure determinant studies toward an understanding of municipal financial behavior has drawn mixed reaction, usually dependent upon the parameters of what the investigator wishes to explain. As a theoretical foundation for the entire budget making process and public decision-making model, systematic expenditure analysis is of marginal explanatory value, as Wilensky indicates

> The present set of studies do not, and in their present form cannot, provide relevant answers to many of the crucial issues which most concern public finance economists and policy makers . . . . While this information (provided by determinant studies) has been of limited use, primarily because it frequently tells us little about the underlying structural relations, the studies have provided us with a first approximation of the important variables.[130]

Wilensky further points out that all determinant studies seem to focus on operating expenses, which implies a twofold assumption justifying the omission of capital expenditures. (1) It is assumed that the ratio

of capital to operating expenses is the same for all cities, and (2) also assumed is a "nonsubstitutable" relationship between capital and operating expenses. Neither assumption can truly be demonstrated to be factual, and the problem is not readily soluable. The investigator can merely recognize the limitation and hope for randomization of the uncaptured effect of unaccounted capital outlay.

Wilensky often noting the difficulties of using single estimating equations which sum complex socio-economic phenomena,[131] suggests a more theoretical groundwork prior to investigation.

> The problems . . . require a positive theory of public expenditures. In other words, a theory which explains why expenditures are as they are rather than what they should be.[132]

Also needed, Wilensky continues, is a recognition of political institutions and their role in expenditure variation.[133] The wedding of models utilizing true political variables valuable to the concerns of urban political analysis, most notably the variation in performance of reformed versus unreformed municipal structures, as measured by expenditure analysis, is necessary. Aside from the limited operationalization (mentioned earlier) of the Lineberry and Fowler study, only two works have focused upon expenditures as a measure of output of varying municipal structure.

Urban Government Structure and Expenditure Analysis

The first study to be viewed is in the determinant expenditure patterns, with political variables the main control variables. Booms examined cities between 25,000 and 100,000 population in Ohio and Michigan using as dependent variables functional expenditure outlays (fire, police, sanitation, highways) and local department increase. The major

control variable is form of government. (No measure to test the possible spuriousness of governmental form, such as regional control, as employed by Wolfinger and Field, is used). Booms concludes that (a) the form of government does have an effect upon the level of per capita expenditures, and (b) if one accepts an equality of output per expenditure dollar, city manager cities are more efficient than their unreformed counterparts. Reformed governmental institutions provide the same level of service outputs at lower per capita costs than their unreformed counterparts.[134] Booms in essence tests two hypotheses: (1) the form of city government has an important effect upon per capita expenditure level; and (2) the manager is more efficient (see above). Using basic analysis of variance techniques, Booms concluded that manager cities and mayor cities are not from the same population.[135] Booms' contribution is valid, but notably lacking in an inclusion of independent variables used in determinant studies, and the relative importance of political versus economic variables cannot be gauged.

Chester Rogers enlarges the model as discussed above, and is the only writer to integrate expenditure level dependent variables into the Dye-Easton scheme described earlier.[136] Two sets of independent variables are used, political system variables and environmental variables. Rogers notes the literature[137] which links governmental form to socio-economic conditions, and accepts this linkage as prior to expenditure output analysis.

The socio-economic variables utilized are basically the wealth, density, population, and central city indicators common to determinant studies. Four political variables used are: (1) governmental form;

(2) type of ballot; (3) type of election; and (4) administrative centralization. Measures of impact are: (1) fire insurance rating; and (2) planning expenditures.[138] Rogers' analysis is limited by exclusion of all techniques other than a comparison of means, controlling by categories of relevant independent variables. Whereas Lineberry and Fowler employed correlational data to create a reformism indice, utilizing interval levels of measurement, Rogers conservatively restricts his governmental variables to nominal categories. The only "controlling" possible is therefore tabular, and much information inherent in the data is left unused.[139]

Whereas Booms had found form of government to be significant in determining governmental performance, utilizing no socio-economic controls, Rogers finds the opposite. He concludes,

> In summary of the relationship of the political variables to policy it can be said that they have no impact . . . . Where initial examination seemed to support the hypotheses, when relevant environmental variables were controlled for, the relationship disappeared.[140]

Rogers concludes that although his analysis showed no "arrow" from political system to output, expansion to include other political indicators should take place before "abandoning" Dye's model. He suggests inclusion of "interest group" community power indicators,[141] which are hard to collect on a systematic and comparative scale.

Certainly no justification for the importance of political system variables can be gleaned from the Rogers study, and Booms omission of socio-economic controls leaves his conclusion that structure is significant in doubt. Richard Cole (described earlier) reaches conclusions similar to Roger's with output data other than expenditure levels. Lineberry

and Fowler's conclusion was based upon a slightly different conceptual scheme, as they tested reformism as it affected translation of environment into policy. It appears as if methodology, at least in part, determines conclusions.

Aggregate Policy Analysis: Beyond Mindless Empiricism

The question remains: Is the tradition of analysis utilizing regression techniques to explain budget variation indicative of what Wildavsky and Meltsner label "mindless empiricism?"[142] They suggest a connecting of available findings to information useful to the policy maker.

> Aggregates like per capita income and level of taxation must be connected to individual behavior if the research is to be instructive . . . . To know how and why participants make decisions and to discern the objective explicit or implicit in their actions is to place oneself in a better position to make policy recommendations.[143]

Meltsner and Wildavsky's alternative, the "individual approach," offers the theoretician little choice. The reformation needed to operationalize full individual choice models within the urban environmental setting simply rules out systematic analysis, and therefore eliminates any hypotheses testing concerning major independent variables. It will be the position of this volume, however, that within the aggregate approach there is ample room for consideration of the behavioral component in budget determination. As discussed previously within the context of state policy analysis, Jack Walker, in his concern with innovation, stressed the time factor in comparing state policy, and injected the decision-making component, as he noted the tendency of state policy makers, in personal contacts with one another, to adopt similar policies. If such dimensions

can be added to the urban policy process, perhaps some of the criticisms expressed by Meltsner, Wildavsky, and Wilensky can be answered.[144]

Critics have also focused upon the lack of theoretical underpinning, most notably in the expenditure studies of economists. The basic Dye model, usually employed by political scientists, must also be challenged, however. Chapter II will focus upon various model building alternatives in testing of comparative municipal output, with basic independent variables both environmental conditions and governmental structure variations. A testing of those still unanswered questions incurred by the "ethos" debate will be undertaken. The time dimension should further encourage consideration of economic models already well suited to studies of rates of change.

Table 1-2 shows the components of state and local policy studies. One must conclude that consideration of any new model must lie in an enlargement of present findings in municipal policy literature. A perusal has indicated a limited use of dependent variables whenever policy outputs are considered, and a similar lack of inclusion of political independent variables when policy outputs as measured by various expenditure measures are viewed. No study has focused upon the differences peculiar to reformed versus unreformed structures as they face different environmental challenges, for instance, the decaying, possibly "exploited" aging of central cities as urbanization reaches into the seventies. The advantages of a factor analytic approach, such as taken at the state level by Hofferbert and Sharkansky, are not utilized. In short, the systematic, comparative study of urban policy output over time, with respect to more normative concerns, is at a quite limited stage of development.

Table 1-2.--Comparative State and Urban Policy Studies

Study	Temporal	Behavioral Dimension Decision-Makers	Political Independent Variables	Expenditure Dependent Variables
State				
Dawson-Robinson			X	X
Dye			X	X
Sharkansky	X		X	X
Sharkansky-Hofferbert			X	X
Sharkansky	X	X		X
Hofferbert	X	X		X
Fry and Winters			X	X
Walker	X	X	X	
Urban Policy				
Wolfinger-Field				
Lineberry-Fowler			X	X
Cole		X	X	X (limited)
Clark			X	X (limited)
Municipal Expenditure				
Fabricant	X (limited)			X
Brazer	X			X
Stephens-Schmandt				X
Kurnow				X
Fisher			X (limited)	X
Bahl	X			X
Woo				X
Campbell-Sacks	X			X
Booms			X	X
Rogers			X	X

NOTES

[1]David Easton, The Political System (New York: Alfred A. Knopf, 1953), pp. 352-358. Here Easton asks for linkages between theoretical propositions and empirically testable proposition.

[2]V. O. Key, Jr., American State Politics (New York: Alfred A. Knopf, 1956), p. 99; Joseph Schlesinger, "A Two Dimensional Scheme for Classifying States According to the Degree of Inter-party Competition," American Political Science Review XLIX (1955), 1120-28; Robert T. Golembiewsky, "A Taxonomic Approach to State Political Party Strength," Western Political Quarterly XI (1958), 484-513.

[3]Lester Milbrath, "Political Participation in the States," in Herbert Jacob and Kenneth Vines, Politics in the American States: A Comparative Analysis (New York: Little Brown, 1965).

[4]Milbrath, p. 50.

[5]Thomas Dye, Politics, Economics and the Public (Chicago: Rand-McNally, 1966), p. 252. Here Dye is citing V. O. Key, Jr., Southern Politics in State and Nation (New York: Alfred Knopf, 1951), pp. 298-314; and Duane Lockard, New England State Politics (Princeton, New Jersey: Princeton University Press, 1959), pp. 320-340.

[6]Dye, Politics, Economics and the Public, pp. 251-252.

[7]By models here is meant an abstraction of reality, or a symbolic representation of a complex process. In terms of theory building and creation of testable hypothesis a model is used to " . . . develop a process that will reproduce the same patterns of empirical data that are found in specific concrete situations." The above is from Paul Davidson Reynolds, A Primer in Theory Construction (New York: Bobbs-Merrill, 1971). p. 111. Further elaboration on the empirical representation of process can be found in Hubert Blalock, Theory Construction (Englewood Cliffs, New Jersey: Prentice Hall, 1969).

[8]Dye, Politics, Economics and the Public, p. 5.

[9]Easton, The Political System. Here Easton calls for the direction of a new type of political science, one resting upon answering the question of system persistence and based upon the theory building techniques that allow for hypothesis verification. By the mid-sixties Easton's suggestions have spawned public policy analysis as a viable field.

[10]Dye, Politics, Economics and the Public, pp. 8-10. Dye is referring to the literature concerning the relationship of governmental form on a national level to socio-economic development. See also

Seymour Martin Lipset, "Some Social Requisites of Democracy: Economic Development and Political Legitimacy," American Political Science Review LIII (1959), 69-105; Robert R. Alford, Party and Society (Chicago: Rand-McNally, 1963); Phillips Cutright, "National Political Development: Measurement and Analysis," American Sociological Review XXVIII (1963), 253-264.

[11]Dye, Politics, Economics, and the Public, p. 4.

[12]Richard E. Dawson and James A. Robinson, "Inter-Party Competition, Economic Variables, and Welfare Policies in the American States," Journal of Politics XXV (1963), 265-289.

[13]Ibid., p. 285.

[14]Dye, Politics, Economics, and the Public, p. 293.

[15]Ira Sharkansky, Spending in the American States (Chicago: Rand McNally, 1968).

[16]Ira Sharkansky and Richard Hofferbert, "Dimensions of State Politics, Economics, and Public Policy," American Political Science Review LXIII (1969), 867-79.

[17]Factor scoring as employed by the authors accomplishes two tasks. The multicollinearity of the independent variables is eliminated, as is the complexity measures reflecting underlying phenomena. Also the data is "standardized," that is, given a mean of zero, and a standard deviation of one. See Harry H. Harmon, Modern Factor Analysis (Chicago: University of Chicago Press, 1960), pp. 360-372.

[18]Sharkansky and Hofferbert, "Dimensions of State Politics," p. 867.

[19]Ibid., pp. 870, 877.

[20]Ibid., p. 878.

[21]Ira Sharkansky, "Government Expenditures and Public Services in the American States," American Political Science Review LXI (1967), 1066.

[22]Ibid., p. 1077.

[23]Richard Hofferbert, "Ecological Development and Policy Change," Midwest Journal of Political Science X (1966), 464.

[24]Ibid., p. 468. See also Thomas Anton, "Roles and Symbols in the Determination of State Expenditures," Midwest Journal of Political Science XI (1967), 27-43.

[25]Thomas Dye, Understanding Public Policy (Englewood Cliffs, N.J.: Prentice-Hall, 1972), p. 261.

[26]Ibid., p. 520.

[27]Brian R. Fry and Richard F. Winters, American Political Science Review LXIV (1970), 508-522.

[28]Ibid., p. 520.

[29]Here as figured by Tax Foundations Incorporated; see Burdens and Benefits of Government Expenditure by Income Class, 1961 and 1965 (New York: Tax Foundations Incorporated, 1967).

[30]Fry and Winters, p. 513.

[31]Ibid., pp. 516-522.

[32]Jack Walker, "The Diffusion of Innovations Among the American States," American Political Science Review LXIII (1969), 888-899.

[33]Ibid., p. 887.

[34]Ibid., p. 898. Also see Charles F. Cnudde and Donald J. McCrone, "Party Competition and Welfare Policies in the American States," American Political Science Review LXIII (1969), 858-866.

[35]Richard Hofstader, The Age of Reform (New York: Alfred A. Knopf, 1955).

[36]Edward C. Banfield and James Q. Wilson, City Politics (Cambridge, Massachusetts: Harvard University Press, 1963), p. 9.

[37]Ibid., pp. 35-40.

[38]Ibid., p. 41.

[39]Ibid., p. 46.

[40]Ibid., pp. 139-142.

[41]By "ecological" fallacy is meant an inferring of individual behavior from the analysis of aggregate units. See Robert Dubin, Theory Building (New York: The Free Press, 1969), p. 48.

[42]Edward C. Banfield and James Q. Wilson, "Public Regardedness as a Value Premise in Voting Behavior," American Political Science Review LVIII (1964), 876-877.

[43]Ibid., p. 128.

[44]Ibid., p. 126.

[45]Edward C. Banfield and James Q. Wilson, "Political Ethos Revisited," American Political Science Review LXV (1971), 1048-1063.

[46]Ibid., 1048-1050.

[47]Wilson and Banfield, City Politics, p. 9.

[48]Raymond Wolfinger and John O. Field, "Political Ethos and the Structure of City Government," American Political Science Review LX (June, 1966), 306.

[49]Ibid., p. 308.

[50]Ibid., p. 309.

[51]See John Kessel, "Governmental Structure and Political Environment," American Political Science Review LXI (1962), 615-620; Leo F. Schnore and Robert R. Alford, "Forms of Government and Socioeconomic Characteristics of Suburbs," Administrative Science Quarterly (1963), 1-17; and Phillips Cutright, "Non Partisan Electoral Systems in American Cities," Comparative Studies in Society and History (1963), 212-226. The literature cited above shows agreement upon the fact that cities with cleavages and industrial bases tend toward "unreformed" structures. See also Robert R. Alford and Harry M. Scoble, "Political and Socioeconomic Characteristics of Cities," in Municipal Year Book (Chicago: International City Managers Association, 1963), pp.74-84. The authors here cite the influence of population change and city size. Again stable, large cities tend toward "unreformed" structures.

[52]Wolfinger and Field, "Political Ethos," p. 310.

[53]Ibid., p. 320.

[54]Robert L. Lineberry and Edmund P. Fowler, "Reformism and Public Policies in American Cities," American Political Science Review LXI (1967), 701-716.

[55]The methodological advances noted here are: (1) the use of a continuous notion of reformism, which is the consideration that the elements of "reformed" government are additive and can be "scored," suggesting possible internal level analysis; and (2) the statement of specific hypothesis, to be tested and accepted or rejected. Here conclusions are considered in light of definitions stated prior to investigation.

[56]Lineberry and Fowler, "Reformism," p. 704.

[57]Ibid., p. 716.

[58]The urban political environment as a concept must include both actual socio-economic, regional conditions, as well as patterns of cleavage and local power structures (extra political). See David R. Morgan and Samuel A. Kirkpatrick, eds., Urban Political Analysis (New York: The Free Press, 1972), p. 12; Scott Greer, Metropolitics: A Study of Political Culture (New York: John Wiley, 1963); Samuel A. Kirkpatrick, "Multidimensional Aspects of Local Political Culture," Western Political Quarterly XXIII (1970), 808-828; Oliver P. Williams and Charles R. Adrian, Four Cities: A Study of Comparative Policy Making (Philadelphia: University of Pennsylvania Press, 1963).

[59]Cutright, "Non Partisan Electoral Systems," pp. 65-81.

[60]Ibid., p. 80.

[61]Kessel, "Governmental Structure," pp. 15-20.

[62]Ibid., p. 615.

[63]Ibid., p. 618.

[64]Alford and Scoble, p. 74.

[65]Ibid., p. 76.

[66]Alford and Schnore, p. 12.

[67]Robert C. Wood, 1400 Governments (Cambridge, Massachusetts: Harvard University Press, 1961). See also Robert Wood, Suburbia: Its People and Their Politics (Boston: Houghton Mifflin, 1959). Wood sounded early warning that suburban, "reformed" government may not coincide with democratic norms.

[68]For a discussion of inputs, outputs, and impact, see Ira Sharkansky, "Environment, Policy Output, and Impact," in Ira Sharkansky, ed., Policy Analysis in Political Science (Chicago: Markham Publishing Company, 1969), pp. 61-77.

[69]Edgar L. Sherbenou, "Class Participation, and the Council Manager Plan," Public Administration Review XXI (1961), 131-135.

[70]Bernard Booms, "City Governmental Form and Public Expenditure Levels," National Tax Journal XVIV (1966), 198.

[71]Richard L. Cole, "The Urban Policy Process: A Note on Structural and Regional Influence," Social Science Quarterly LII (1971), p. 654.

[72]Analysis of variance techniques allow for the testing of differences between data grouped by a characteristic used as an "independent variable."

[73]Terry N. Clark, "Community Structure, Decision Making, Budget Making and Urban Renewal in 51 American Communities," American Sociological Review XXXIII (1968), 576-94.

[74]This is a term from the community power literature. "Pluralistic" power structures are diverse, with no controlling faction governing in its own interest. Policy is made by competing interest groups. See Robert Dahl, Who Governs (New Haven: Yale University Press, 1961), for the classic pluralist statement. The "elitist" power structure, on the other hand, is characterized by a clique, ruling outside the electorally accountable process and keeping decision making behind the scenes. See Floyd Hunter, Community Power Structure (New York: Anchor, 1954), for the classic elitist statement.

[75]Clarke, p. 591.

[76]Ibid., p. 589.

[77]Ibid., p. 590.

[78]Arnold J. Meltsner and Aaron Wildavsky, "Leave City Budgeting Alone," in John P. Crecine, ed., Financing the Metropolis (Beverly Hills, California: Sage Press, 1970), p. 312.

[79]Ibid.

[80]All sources mentioned in depth by Meltsner and Wildavsky are included in this chapter.

[81]Soloman Fabricant, Trends of Government Activity Since 1900 (New York: National Bureau of Economic Research, 1952).

[82]Ibid., p. 132.

[83]Ibid., p. 136.

[84]Harvey Brazer, City Expenditures in the United States (New York: National Bureau of Economic Research, 1959).

[85]Ibid., p. 3.

[86]G. Ross Stephens and Henry J. Schmandt, "Revenue Patterns of Local Governments," National Tax Journal XV (1962), 432-437.

[87]Ibid., p. 437.

[88]Ibid.

[89]Edward Kurnov, "Determinants of State and Local Expenditures Re-examined," National Tax Journal XVI (1963), 252-255.

[90]G. W. Fisher, "Interstate Variation in State and Local Government Expenditures," National Tax Journal XVII (1964), 57-64.

[91]Multiple partials techniques allow for one to gauge the effort of a group of independent variables upon the dependent variable while controlling for another group of independent variables.

[92]Fisher, p. 74.

[93]Ibid.

[94]Ibid., p. 73.

[95]See Stanely Scott and Edward Feder, Factors Associated with Municipal Level Expenditure Levels: A Statistical Study of California Cities (Berkeley: Bureau of Public Administration, 1957); and Deil S. Wright, Trends in Local Finances: The Case of Iowa Counties (Iowa City, Iowa: University of Iowa Institute of Public Affairs, 1959).

[96]Roy W. Bahl, Metropolitan City Expenditures (Lexington, Kentucky: University of Kentucky Press, 1959).

[97]Time series studies upon the changing nature of taxation and expenditure patterns have produced varying theses concerning the uniformities of policies over time. Dick Netzer, The Economics of the Property Tax (Washington: Brookings, 1966), has noted the changing pattern in taxing which stimulates economic decentralization within metropolitan areas, as the rising tax rates in central cities tend to manifest a spiralling effect upon central city deterioration, leading to further urban-suburban differentiation. Others show growing uniformities over time. See Roy Bahl, Metropolitan City Expenditures, p. 21.

[98]Bahl, p. 125.

[99]The 1950 percent of explained variance (R^2) is .2993; for 1960 it is .4792. Other expenditure figures show corresponding increases in the ability to predict. The "outside" forces not accounted for in the linear equations have decreased by the difference between the two periods.

[100]Bahl, p. 126.

[101]Many writers have pointed to the high explanatory power of population density. Stanley Scott and Edward Feder in Factors Associated with Variations in Municipal Expenditure Levels (Berkeley: Bureau of Public Administration, 1957), p. 4, while studying California cities, found density highly useful, as did Amos H. Hawley, "Metropolitan Population and Municipal Government Expenditures in Central Cities," Journal of Social Issues VII (1951), in a national sample.

[102]Bahl, pp. 121-122.

[103]Jose F. Berolzheimer, "Influences Shaping Expenditures for the Operation of State and Local Governments," The Bulletin of the National Tax Association XXXII (1947), 170-175.

[104]Richard Spangler, "The Effect of Population Growth Upon State and Local Government Expenditures," National Tax Journal XVI (1963), 193-196.

[105]Seymour Sacks and Richard Harris, "The Determinants of State and Local Expenditures and the Intergovernmental Flow of Funds," National Tax Journal XVII (1964), 75-85.

[106]Roy W. Bahl and Robert J. Saunders, "Determinants of Changes in State and Local Government Expenditures," National Tax Journal XVIII (1965), 51. A fourth variable is pupil-teacher ratio, used as an output consideration.

[107]Edward R. Morss, "Some Thoughts on the Determinants of State and Local Expenditures," National Tax Journal XIX (1966), 95. See also John C. Weicher, "Aid Expenditure and Local Government Structure," National Tax Journal XV (1962), 573-585.

[108]Morss, p. 98.

[109]Thomas F. Pogue and L. G. Sgontz, "The Effects of Grants in Aid on State-Local Spending," National Tax Journal XXI (1968), 199.

[110]John Osman, "The Dual Impact of Federal Aid on State and Local Expenditure," National Tax Journal XXI (1968), 362-372. See also John Osman, "On the Use of Intergovernmental Aid as an Expenditure Determinant," National Tax Journal XXI (1968), 437-444.

[111]Hawley, pp. 100-103.

[112]Brazer, pp. 3-5.

[113]S. K. Woo, "Central City Expenditures and Metropolitan Areas," National Tax Journal XVIII (1965), 337-353.

[114]Alan Campbell and Seymour Sacks, Metropolitan American (New York: The Free Press, 1967).

[115]Woo, p. 351.

[116]Ibid., p. 353.

[117]Campbell and Sacks, pp. 120-125.

[118]Ibid., p. 44.

[119]Ibid., p. 45.

[120]Ibid., p. 66.

[121]Throughout Metropolitan America Campbell and Sacks note the importance of this variable, chastizing Stephens and Schmandt, "Revenue Patterns of Local Governments," National Tax Journal XV (1962), 432-435, along with their "Local Government Expenditures," Land Economics XLII (1966), 397-406. Also cited is Harvey Shapiro, "Economics of Scale and Government Finance," Land Economics XXXIX (1963), 175-183, for failure to include it in his model.

[122]Campbell and Sacks, p. 136.

[123]William Neenan, "Suburban-Central City Exploitation Thesis: One City's Tale," National Tax Journal XXIII (1970), 117-139.

[124]David Auld and Gail Cook, "Suburban-Central City Exploitation Thesis: A Comment," National Tax Journal XXV (1972), 505-599.

[125]David D. Ramsey, "Suburban-Central City Exploitation Thesis: Comment," National Tax Journal XXV (1972), 599-605.

[126]William B. Neenan, "Suburban-Central City Exploitation Thesis: Reply," National Tax Journal XXV (1972), 609-610.

[127]Bahl, p. 32.

[128]Ibid., p. 117.

[129]Ibid., p. 129.

[130]Gail Wilensky, "Determinants of Local Government Expenditures," in John P. Crecine, ed., Financing the Metropolis (Beverly Hills: Sage, 1970), p. 198.

[131]Ibid., p. 207.

[132]Ibid., p. 215.

[133]Ibid., p. 216. Much the same is offered by Meltsner and Wildavsky "Leave City Budgeting Alone," P. 318, as they note somewhat of a tendency toward "mindless empiricism" in this literature, and a lack of any theoretical foundation. Their approach would analyze individual budget decision-making, which they do for Oakland, California. This aspect of micro-macro linkages will be discussed later in this chaper.

[134]Bernard H. Booms, "City Governmental Form and Public Expenditure Levels," National Tax Journal XIX (1966), 192.

[135]Analysis of variance tests the "effect" of grouping by control variable. If placing the cities into nominal groups explains a significant amount of the total variation among dependent variables, in this case, spending, the independent variable grouping effect allows one to infer that manager and mayor cities are "different;" see Hubert Blalock, Social Statistics 2d ed., (New York: McGraw Hill, 1972), pp..317-361.

[136]Chester P. Rogers, "Environment, System, and Output: The Consideration of a Model of Municipal Spending," Social Forces XLVIII (1969), 72-87.

[137]See Kessel, "Governmental Structure and Political Environment," and Schore and Alford, "Forms of Government, and Socioeconomic Conditions of Suburbs," and Sherbenou, "Class, Participation and the Council Manager Plan."

[138]Rogers, p. 82.

[139]With interval level control variables meeting assumptions of normality, partialling is a much more satisfactory method of control. Lineberry and Fowler utilized this technique, lead them to opposite conclusions from those of Rogers, although the former used only a gross expenditure measure. See Blalock, Social Statistics, pp. 433-440.

[140]Rogers, p. 85.

[141]Ibid., p. 86.

[142]Meltsner and Wildavsky, p. 318.

[143]Ibid.

[144]See James W. Clarke, "Environment, Process and Policy," in Morgan and Kirkpatrick (eds.) Urban Political Analysis pp. 341-352 for an interesting analysis which is semi-experimental and quite well constructed.

CHAPTER II

A THEORETICAL FRAMEWORK FOR URBAN EXPENDITURE RESEARCH

There appears to be an inexplicable gap between the more abstract "theorizing" of empirical theorists and the more concrete forms of "theory building" by empirical investigators. Empirical analysts of the urban political system seem for the most part to have adopted the Dye-Easton approach: a view casting measurable "functions" of political processes as a linear combination of two segments. While the first segment views policies as basically determined by societal conditions, the second places some cause in the structural make-up of the governmental unit. This chapter will investigate the viability of this approach in examining changes in functional expenditures over time, especially the differing behavior of varying governmental forms. Also the applicability of recent trends in concept development concerning "political economy" and competition will be examined.

Theoretical Groundwork: Systems Theory and Structural-Functional Analysis

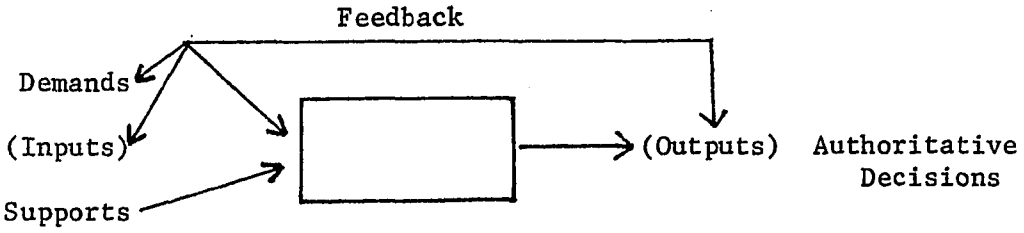
The major inputs to systematic conceptualization of the political process are twofold: (1) systems theory in the tradition of David Easton and (2) structural functional analysis as put forth by Almond and Powell. Prior to a discussion of the different nuances of the above approaches one must consider the pioneering work of Talcott Parsons.

Parson's work centers around the fundamental question of system survival over time. A social system, in surviving, must perform the

following functions: (1) goal attainment; (2) adaption; (3) pattern maintenance and (4) integration. In essence a system must maintain social regularity in a changing environment. A comparison between systems can be made relative to the performance of the above functions.[1]

David Easton's concern is more specifically the "political system," the output of which is the "authoritative allocation of values."[2] Inputs to the system are the demands and supports generated in the political environment. The conversion of demands into "authoritative allocations" occurs within the decision making structures, or "black box." A simplified version of the political system as conceptualized by Easton is shown in Figure 2-1.[3]

Figure 2-1.--A Simplified Eastonian System



In comparative research, therefore, the task is to identify the inputs and forces that shape and change them, to trace the process through which they are transformed into outputs, to describe the general conditions under which such processes can be maintained, and to establish the relationship between outputs and succeeding inputs to the system. Dynamic elements of the system are captured by the concept of "feedback," which is essential regulative and highlights the concern of Easton's work, which is the persistence of political systems over time as they respond to "stress in their environments."[4]

Almond and Powell are more concerned with specifying points of analysis in comparing system behavior, and advocate examining systems according to their performance of basic requisite functions.[5] In essence the Almond-Powell conceptualization is an enlargement upon the Parsonian scheme. Functions can be divided into: (1) capabilities, (2) conversion, and (3) system maintenance and adaption functions. The latter refers to the relationship between the polity and socialization of its members, and is beyond the present concern. A political system's "capabilities" are its support. Conversion functions are those necessitated by the aggregation and articulation of "interests" and are actual actions of governmental structures as they perform rule making, rule application, and rule adjudication.[6] The main concern of this analysis centers upon capabilities functions, especially as performed by differing conversion structures. These capabilities' functions are fourfold: extractive, distributive, regulative, and responsive.[7] The first two merit closer examination.

> In characterizing the extractive capability we can first consider the amount of resources which flows into the government at various levels (national, state, local.) The support aspect of extraction can also be ascertained--the ratio of extractions levied to those obtained, and the willingness of a population to provide resources under different sets of circumstances.[8]

Varying structures of government, as viewed in such a structural functional framework can be compared relative to their taxing efforts. Likewise, expenditure levels are subject to similar evaluation.

> The most relevant measurements of distributive capacity must involve the quantity and importance of the objects distributed, the areas of human life they touch, the particular sections of the population receiving various benefits, and the relationship between individual needs and governmental distribution to meet those needs.[9]

William Mitchell offers a slightly varied structural-functional viewpoint, more in the tradition of Parsons. Four functions are "requisite":[10]

(1) authoritative specification of systems goals
(2) authoritative resource mobilization
(3) integration of the system
(4) allocation of costs

The structural-functional approaches of Parsons, Almond and Powell and Mitchell are most frequently applied to the development of the nation-state's political system. Much the same type of analysis, albeit with a narrower range of functions could well be applied within urban parameters, and there is no reason to slight the developmental process. As Mitchell has suggested:

> the analysis of capabilities also enables us to explain and even to predict cycles of short range and long range change in response to various kinds of environmental pressures.[11]

Systems and Structural Functional Analysis: Contributions Toward a Hybrid Urban Model

Although major theorizing has considered the developing nation-state, minor deviations of Easton's model have guided organization of disparate empirical research in the urban field. Morgan and Kirkpatrick successfully apply a systems framework to arrange a diverse amount of urban research. They note the use of systems analysis (Eastonian) in separating the political from the non-political in examining policy outcomes and feedback and in relating the political system to its environment. Also noted is the failure of systems analysis in general to deal with power and influence and its problem of operationalization.[12]

Brett Hawkins likewise sees the Eastonian system as a valid organizational device. (Figure 2-2).

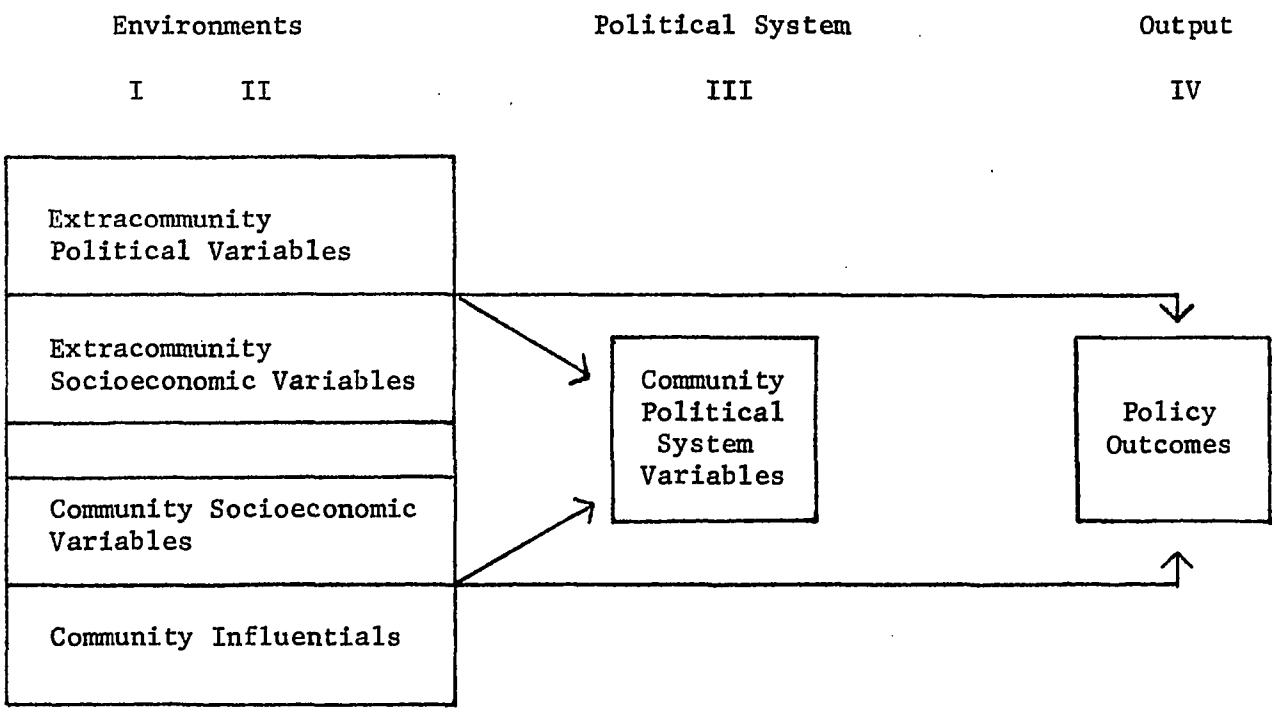
> Systems analysis holds that cities can be scientifically described and classified in much the same way as other phenomenon in the broad class "social systems".[13]

More specifically Hawkins notes the use of systems as a device for viewing city government:

> an interrelated set of structures and processes that encounter environmental stimuli and respond with "outputs" of goods services and deprivations.[14]

Figure 2-2 shows Hawkin's model of urban politics.[15]

Figure 2-2.--Hawkin's Model of Urban Politics



Hawkins, like Morgan and Kirkpatrick, utilizes "systems" as a valuable secondary level organizational level. In actuality, however, the use of a systems paradigm in guiding singular research efforts has not occurred. The reasons for this reflect the fact that such a paradigm (the use of which lies in comparative research) involves operationalization of such a wide range of concepts across such a wide spectrum of subject areas as to become all but impossible. The limited Dye model employed at the state level represents a level of analysis actually valid only as a starting point, and can scarcely be called an operationalization of the most rudimentary Eastonian system.

Phillip Coulter criticizes the Dye systems approach for a weakness in operationalizing variables, especially in relating socio-economic cleavages to policy. The causal link between a cleavage and a policy is suspect, as is the notion of expenditure as a measure of policy. He suggests that one cannot truly consider expenditures as indicators without knowledge of within city distribution. Coulter makes a plea for a return to case studies.[16] While this criticism is valid, a return to isolated analysis is not the necessary response. The position taken in this chapter is that the main explanatory power of "systems theory" as a research paradigm lies in consideration of the "time" dimension, and the relation of political outputs to a changing environment, especially in conjunction with some operationalization of the decision making process, albeit in "model" form only.

At the local level even less application has been made of structural functional than of systems analysis. Kirkpatrick has noted the usefulness of systems and structural-functional analysis as an heuristic tool, while noting the plaucity of the use of these paradigms for applied research.[17]

One can only speculate that many of the same reasons prevent both, with the former's concern for political development adding to its cumbersome fit upon urban political reality. It would seem, however, that performance of certain particular urban functional requisites can serve as a meaningful gauge of "outputs." Also, Almond and Powell's "capabilities functions," notably extractive and distributive can provide wider parameters in which to observe the aforementioned systems phenomenon. Such an approach would provide the comparison of different "types" of political systems with regard to changing environments with respect to the performance of certain urban functions (captured by expenditure data).

Two other paradigms merit analysis, however, before a working model can be constructed. The above discussion of extractive and distributive capabilities leads to a body of policy theory known as "public choice analysis," and the basic urban policy literature, notably that which examines reformed versus unreformed structures and electoral systems suggests a need to examine the effect of a competitive political environment upon functional outputs of the system as well as the relationship between competition and the extractive and distributive capabilities of a local political system. Two collateral research areas therefore merit consideration and inclusion in a workable model of municipal expenditures over time: the literature of economic public choice models and that dealing with electoral competition and strategies of those bidding for office.

Public Policy and Economic Models

The study of public policy, which borrows concepts from economics, has undergone major theoretical enlargement since 1968 with numerous and largely unoperationalized implications for the study of urban policy.

The seminal work under this new rubric, now known as "public choice" analysis was done by Curry and Wade.[18] Policies are determined by bargaining among competing political actors, who are faced with indifference curves (functional representations of whatever combinations of two goods, x and y, are available). Curry and Wade develop an expansion of the thesis which relates budget considerations directly to the macro decision-making process of the community. Tullock and Buchanon have developed a typology which compares citizens relative to their preferences for increased public goods or lesser tax shaves.[19] The local political party becomes important as the broker which enuciates this choice. Here one can begin to confront the Coulter criticism: How does a cleavage become a policy? Parties become significant actors in the scheme.

Policy is visualized as a series of supply-demand contacts between the voter (or in economic terms, the consumer) and the competing political parties (the supplier). When an exchange relationship occurs, it is assumed to be at mutual advantage to all actors concerned. The exchange is formalized within the "market" context, which is characterized by:

(a) rules of the system (i.e., the Constitution)
(b) system properties
(c) actors within the system

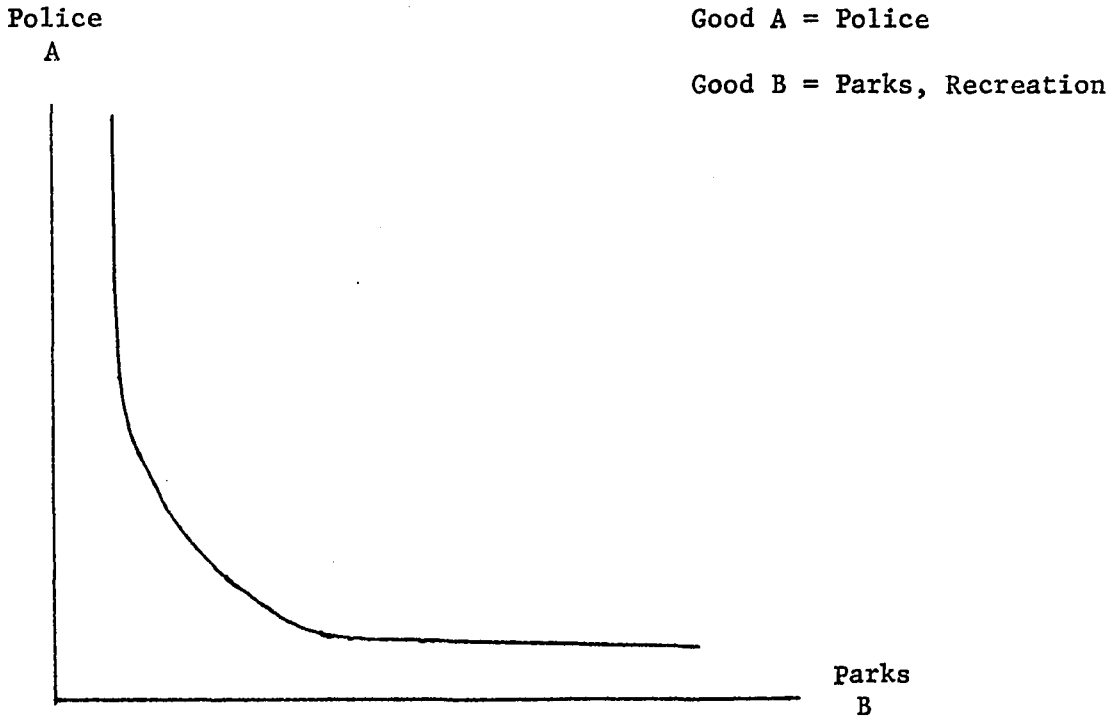
And Actors are conceptualized as:

(a) beneficiary interest group members
(b) fiduciary interest group members
(c) politicians
(d) spectators [20]

A portion of basic economics must be discussed in light of this renaissance of "political economy". Two concepts primia facie to the Curry-Wade thesis are production possibility curves and community indifference

curves. These concepts are important as summary indicators of a political community's economy, in terms of what is possible and what is preferred. The concern here is with the community's "choice," or indifference, within the parameters of what is possible. The term "indifference" is employed to indicate a degree of "slack" in a community's preferences between two items. That is, a city may be willing to lose a certain amount of one "good" before demanding an increase in another. One could visualize, on the local government level, the following situation as shown in Figure 2-3.

Figure 2-3.--Community Indifference Curve



In this ideal case, the society deems parks and police as equally important.

Since the assumption (Figure 2-3) is that more of each service (taken by itself) would be desired, the curve slopes downward and to the right. As the curve extends in either direction from the origin it tends to flatten out, as a saturation point when one or the other service is approached.[21] In this case once a society with the above preferences confronted a situation with an excess of police per capita with literally no park area, that society would be willing to give up quite a few police for even a small addition to the park budget. Any combination of two services could be desired in different amounts by different communities. The possibilities of providing such distributions, however, must be confronted before preferences can be enacted.

> The indifference curve indicates what benefits the individual or community would like to achieve. But what the community can achieve is a different matter.[22]

The graphic device which demonstrates the above is known as the "production-possibility curve," which:

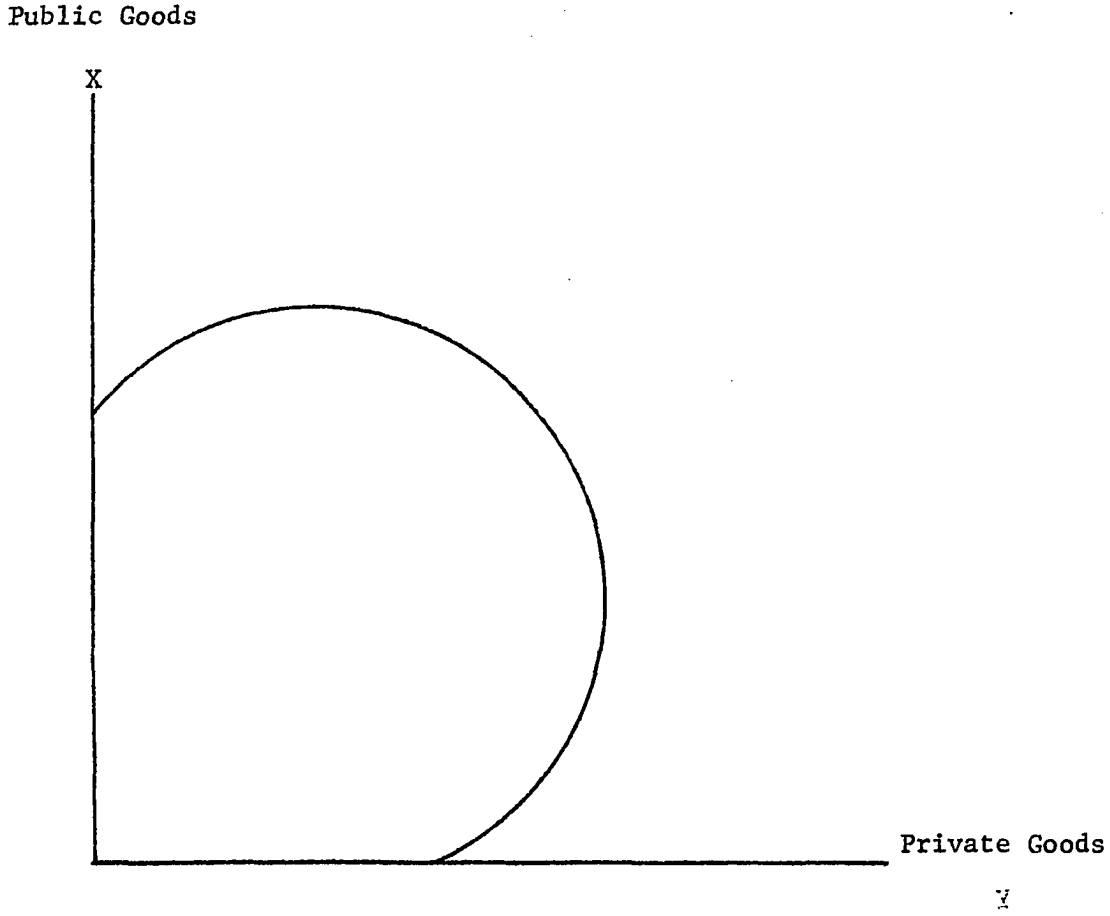
> represents the alternative quantities of x and y which can be produced by a given resource endowment fully used and combined in the most technologically productive manner.[23]

A particular subset of the above is germane to this study. As Samuelson points out the United States is a "mixed economy" with both public and private sectors.[24] On the urban level government expenditures and taxation represent the "political" segment of the economy as opposed to the "private." Therefore, every urban political system confronts the following production possibility curve shown in Figure 2-4.

The community's ability to utilize totally public (no private economy) and totally private (no government economic activity) is reflected by the values of the X and Y intercepts of Figure 2-4. The shape of the curve

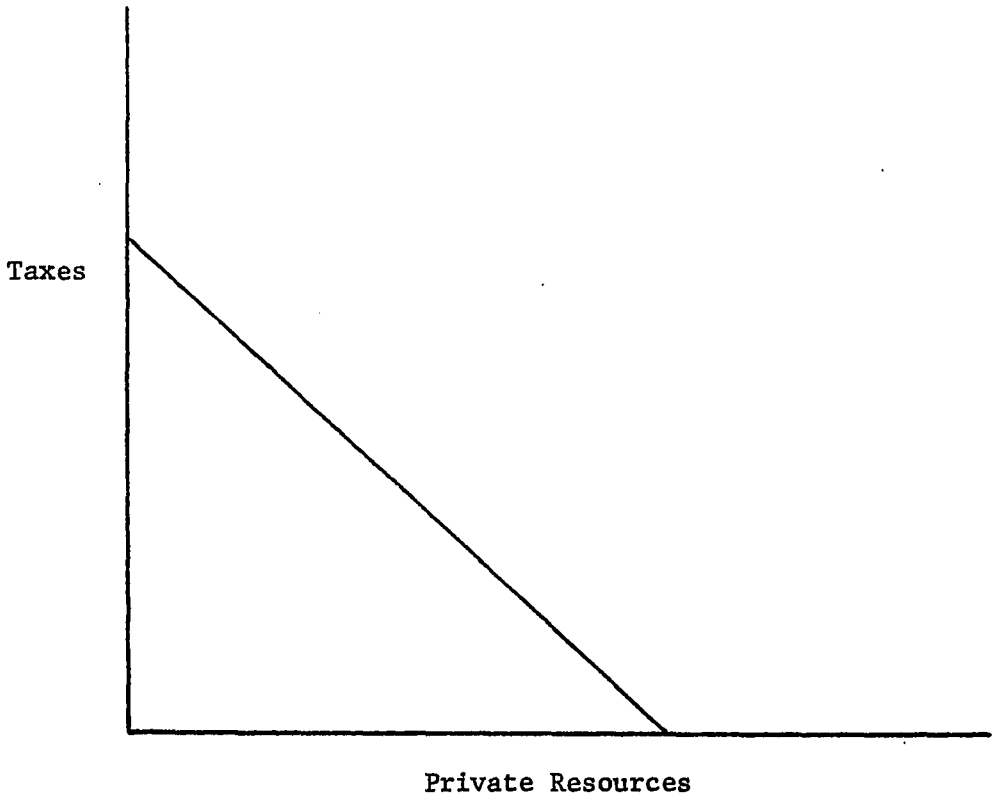
below illustrates, at least for a given society under present conditions, the greater efficiency of a mixed economy. A straight line would indicate a condition in which any shift of relative public and private spheres would not change the actual amount of goods and services possible.[25]

Figure 2-4.--Production Possibility Curve: Mixed Economy



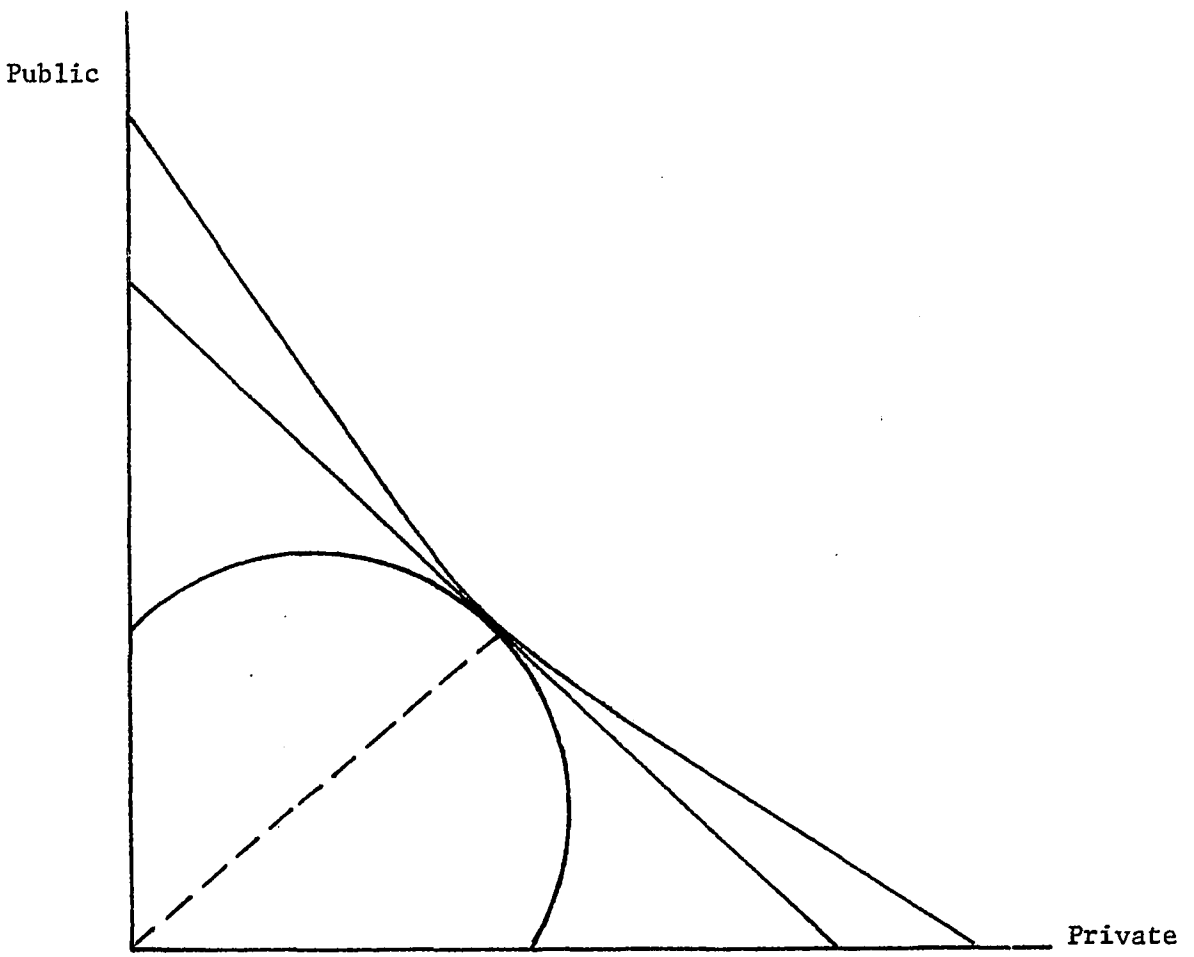
Another concept introduced to public policy analysis by Curry and Wade is the "budget line" (Figure 2-5) which demonstrates the choice of public versus private spending by the aggregate citizenry.

Figure 2-5.--Budget Line



When the community preference curve, production possibility curve, and budget line are combined, one can obtain a summative picture of a political community's aggregate economic picture. (Figure 2-6).

Figure 2-6.--Public-Private Community Economy



The above community has chosen a 50% public and a 50% private expenditure pattern.[26] The dotted line's intersection with the tangency point with the budget line, production possibility curve and community preference (indifference) curve indicates an ideal equilibrium reached at a half private, half public economy.

Curry and Wade offer a set of assumptions about the process by which a community reaches its "equilibrium point."

> (1) The community seeks a particular combination of public and private goods.
>
> (2) The community seeks a particular combination of public goods and a "particular combination of private goods."
>
> (3) The community prefers a greater collection of goods to a lesser one.
>
> (4) The resources of a community and the state of its technology are fixed in the short run but, when fully developed, permit the attainment of a more preferred position than if any productive factor were under utilized.
>
> (5) Legislature social institutions, rules, and processes exist to facilitate the full use of resources and technology and the democratic rating of priorities.[27]

From the above assumptions it is clear that the urban political community, in its choice of public versus private economies, manifests an aggregate "public choice" subject to the analysis under relevant independent political and socio-economic variables. Such a mode of analysis would provide a powerful measure of the scope of the local political system, as the more "public" the economy, the further the reach of the local political system into the economic sphere of the community. In Easton's terminology the boundaries of the political system have increased relative to the economic system, for the political system acts as an interchange between the social system and the environment. For meaningful analysis one must measure outputs of the system over time. As Easton indicates:

> There is little validity for continuing to consider the outputs as terminal points. They are, rather

> part of a continuous chain of activities, soon to be identified as a feedback loop, in which inputs and outputs each directly or indirectly effect each other . . . All systems seek to adapt constructively, at least to some extent, by using, acting upon and shaping the conditions to which they are exposed.[28]

Easton has pointed toward the need of considering the political system's interaction with its boundaries. The system under consideration can, in effect, be shrunken and expanded.[29] In the case of this analysis the boundaries under consideration will be the interaction of the political and economic systems. Changes in the public/private distribution over time can shed valuable light upon the reaction of a society's extractive and distributive functions to a changing environment. One political independent variable, the competitiveness of the political environment will be especially valid in this regard, as indicated below.

Public Choice, Electoral Competition, and Public Policy

The operationalization of political ethos, and group competition is difficult in a systems framework. The literature concerning community power, political structures (reformed versus unreformed) and the local political climate suggests a one dimensional view of urban systems. At one extreme are pluralistic, competitive, group oriented political cultures: at the other are more middle class, elite dominated, non-competitive cultures. (Figure 2-7)

The range is labeled "public-private" because, verbally, the competition between groups in a "contested" electoral atmosphere is "public" while a noncompetitive elite system is "private" especially if "political" decisions are public decisions. The previous discussion of public choice models,

in which the enlargement of political spectrum is considered in economic terms, suggests the following unidimensional representation (Figure 2-8).

Figure 2-7.--A One Dimensional Representation of Urban Political Cultures

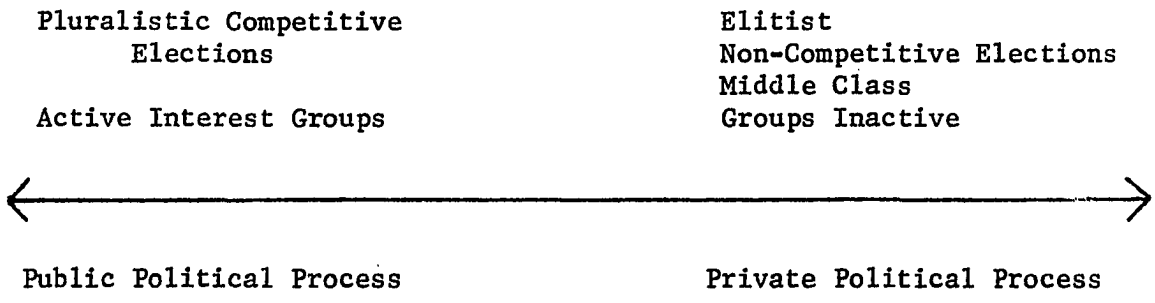
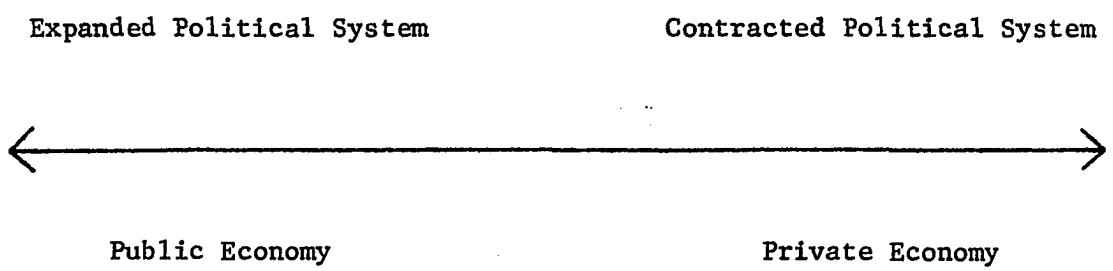


Figure 2-8.--A Hypothetical One Dimensional Political-Economic Solution



The previous suggests grounds for investigation of the relationship between the degree of political competition (representative of the "political" pole and the proportion of the economy in the public sphere.

Public Goods and Bargaining: Electoral Competition and Duopoly

Politics in its Eastonian "authoritative allocation of values" connotation deals with a revealing and ordering of social preferences. When such a process is viewed under the rubric of economic analysis, a possible "ideal type" is a market allocation of social goods and services to citizens much as a business "free market" would to consumers. The nature of competition for government office by parties can be likewise paralleled to competiting firms. Political parties are the mechanisms which translate cleavages (if any) into policy choices. In the United States the predominance of the two party system has historically been viewed as a "market system" offering choices to the voter, and democratic only in the sense that the voter is given some leeway. The choice is "imposed upon" the voter under this rubric rather than the citizens' will being tapped and translated by the party.[30] A one party system is analagous to a monopoly, with the American two party system a "duopoly," with subsequent deviations from a pure market state.[31]

The pure market state is known as "Pareto Optimality," defined by Riker as:

> . . . for a given allocation (of goods) in comparison with all other allocations, none of the other possible ones is at least as good for everybody and better for some. Thus if an allocation is Pareto Optimal, no alternative allocation can improve things for everybody. Any improvement for one must come at the expense of another.[32]

Pareto Optimality represents a difficult consideration because of the hazy nature of "public goods" consumption. As Samuelson notes:

> Public goods are goods which are enjoyed in common in the sense that each individuals' consumption of such a good leads to no subtraction from any other's consumption of that good.[33]

Riker also points to inadequacies in the discussion of Pareto Optimality as a plausible ideal type, noting that individual preference ordering would tend to lead away from a Pareto-Optimal system of public goods allocation and must be buttressed by the concept of "bargaining."

Another basic assumption to this mode of analysis is that of voter rationality. The prime exponent of electoral competition in terms of aggregate voter rationality is Anthony Downs.[34] According to the Downsian framework, if elections are held under perfect rationality assumptions with each competing party would strive for Pareto Optimality (the most appealing strategy) an election would be as efficient a method of attaining this condition as "the market."[35] The basic Downsian model makes use of two axioms:

> (1) Citizens are preference ordering in terms of public policy.
> (2) Candidates' main (only) goal is to be elected.[36]

The result, according to Stokes, is a unidimensional model.

> The root idea of Downs' model is that the alternatives of government action on which political controversy is focused can be located in a one dimensional space . . . At least for illustration Downs interprets this dimension as the degree of government intervention in the economy. Each voter can be located on the scale according to how much government control he wants and each party according to how much control it advocates.[37]

Hence Stokes suggests that electoral competition involves the actual size of the "public sector." Nevertheless such a unidimensional space, in terms of withholding economic goods, is "a priori" constrained. It provides, in absence of individual voter preference curves, a useful conceptual device.[38] Downs views government spending or withholding of spending as a device within the two party context, in which parties bargain with the electorate.

> The government is likely to adopt any act of spending which, coupled with its financing, is a net addition of utility to move voters than it is a subtraction.[39]

Thus the offering of public goods, while a viable strategy in competitive, pluralistic, local cultures, could prove a liability in an environment in which the electorate could be characterized an homogeneous middle class "elitist" culture. The latter non-competitive situation would seem to indicate an appeal to a smaller "public sector." A thorough investigation of the urban political process must include a testing of the viability of the public choice theorists, electoral competition models, and the relation between the two, as well as their connection with the traditional policy studies described in chapter one.

Toward a Context of Discovery

Although existing evidence from related studies within the subfield of urban policy analysis offers fruit for hypothesis-testing (one could merely add the time dimension to the Lineberry-Fowler thesis), further propositions can be derived from the purely theoretical pieces discussed in the preceding section. Thus the basis for this study is hybrid, drawing from untested speculative propositions, as well as a rather disparate body

of research. The next task in the construction of a workable model must be a formulation of testable propositions, later, pending their acceptance or rejection, to be cast as interrelated verified statements. Hence, to a large degree theory is being built, and a particular "theory" is not being tested. As Blalock writes:

> It would be highly misleading to suggest that theories are first arrived at by a deductive process and then tested. The actual process is much more fluid than this and undoubtably always involves an inductive effort. One formulates the best theory he can in the light of existing evidence. He then should formalize this theory in order to spell out its implications.[40]

One must first offer testable prepositions, and Blalock suggests a research strategy of mathematical formalization of verbal propositions followed by a confrontation of error and finally, the influence of causal relationships.[41]

The desired end result will be a "theory" relative to the subject matter at hand, or in the case of this study, a theory limited in initial scope, tying the varying behavior of cities to differing governmental forms. Utmost care must be taken so as to arrive at the conclusions which will add to the above by means of a process which transcends a mere "fulfilling of prophecy" syndrome. In other words, there must always be an implicit null hypothesis underlying the entire investigation at each attempt to link dependent with independent variables. When propositions have been thus proferred, then proved, bits of theory begin to evolve. "Theory" in this case defines the parameters of the intent of the investigation, or municipal expenditure variation. As Sjoberg and Nett point out, theory

> refers to a set of logically interrelated "propositions" or "statements" that are "empirically

> meaningful: as well as to the assumptions the researcher makes about his method and his data. Thus there are three dimensions to theory in science: (1) The broad logical structure, or the form; (2) The generalizations or propositions concerning the patterning of the empirical world (the specific content,) and (3) The assumptions regarding the scientific method and the nature of the data.[42]

It is clear that Sjoberg and Nett, like Blalock, regard theory construction quite apart from the classical "reconstructed logic"[43] mode which Kaplan describes:

> In reconstructed logic, accordingly, theory will appear as a device for interpreting, criticizing, and unifying established laws, modifying them to fit data unanticipated in their formulization and guiding the enterprise of discovering new and more powerful generalizations. To engage in theorizing means not just to learn by experience, but to take thought about what there is to be learned.[44]

While Kaplan is appealing to a strategy of scientific investigation grounded in an expansion of baisc "covering laws" to include propositions logically imbedded in the present state of knowledge, the crux of this investigation must necessarily procede along a course more in the "Contextualist" basis of inquiry.[45] There is simply no existent body of theory from which to derive covering propositions,[46] but there exists a wide range of "theorizing," (as opposed to theory) from which one can gain a range of plausible speculation and derive a scattering of propositions which can, after operationalization and verification, be combined so as to present a useful picture of the urban political economy.

Hence, Chapter II has sought to offer a wider theoretical framework within which to examine city expenditure as public policy. Complex new

parameters have been added to any potential analysis. Indeed, new measures of city policy are suggested. The position adopted here is that the basic questions raised by urban policy analysts need to be approached in much a different manner than has heretofore been attempted. First under the widened theoretical perspective outlined in this chapter; and secondly, with primary emphasis on changes over time. Chapter III will outline the research strategy proposed to complete such an analysis.

NOTES

[1]William Mitchell, Sociological Analysis and Politics: The Theories of Talcott Parsons (Englewood Cliffs, New Jersey: Prentice Hall, 1967), pp. 57-73. Also see Talcott Parsons, The Social System (New York Free Press, 1961).

[2]David Easton, The Political System (New York: Alfred Knophf, 1953), pp. 129-134.

[3]David Easton, "An Approach to the Analysis of Political Systems," World Politics IX (1957): 323-400.

[4]See David Easton, A Systems Analysis of Political Life (New York: John Wiley, 1965).

[5]The concept of requisite functions is borrowed from the study of anthropology by Marion Levy, Structure of Society (Princeton, New Jersey: Princeton University Press, 1952) and in more detail by Robert K. Merton, Social Theory and Social Structure (New York: Free Press, 1949). See also William Flanigan and Edwin Fogelman, "Functional Analysis," in James C. Charlesworth (ed.) Contemporary Political Analysis (New York: Free Press, 1967), pp. 72-85, for an excellent discussion on various functional approaches to social analysis.

[6]Gabriel A. Almond and G. Bingham Powell, Comparative Politics (Boston: Little Brown, 1966).

[7]Ibid., pp. 192-200.

[8]Ibid., p. 195.

[9]Ibid., p. 198. Symbolic and regulative functions are self explanatory. "Responsiveness" as a capabilities function is quite analogous to Easton's feedback.

[10]William Mitchell, The American Polity (New York: Free Press, 1962), chapters 13-14.

[11]Almond and Powell, Comparative Politics, p. 208.

[12]David Morgan and Samuel Kirkpatrick, Urban Political Analysis (New York: Free Press, 1972), pp. 5-22.

[13]Brett W. Hawkins, Politics and Urban Policies (New York: Bobbs Merrill, 1971), p. 11.

[14]Ibid.

[15]Ibid., p. 14.

[16]Phillip Coulter, "Comparative Community Politics and Public Policy: Problems in Theory and Research," in Urban Political Analysis: A Systems Approach ed. by David R. Morgan and Samuel A. Kirkpatrick (New York: Free Press, 1972), pp. 370-378.

[17]Samuel A. Kirkpatrick, "Multidimensional Aspects of Local Political Systems: A Conceptual Approach to Public Policy," Western Political Quarterly XXIII (1970), 808-828. See Oliver P. Williams, "Typologies for Comparative Local Government," Midwest Journal of Political Science (1961), 150-64, for a classification approach to local political systems.

[18]R. L. Curry and L. L. Wade, A Theory of Political Exchange (Englewood Cliffs, New Jersey: Prentice Hall, 1968), pp. 32-35.

[19]Ibid.

[20]Ibid., p. 31.

[21]L. L. Wade and R. L. Curry. A Logic of Public Policy (Belmont, California: Wadsworth, 1970), pp. 59-61.

[22]Ibid., p. 67.

[23]Ibid.

[24]Paul A. Samuelson, Economics (New York: McGraw-Hill, 1955), p. 21. See also Paul A. Samuelson, "The Pure Theory of Public Expenditure," The Review of Economics and Statistics 37 (1955), 350-356.

[25]See Paul A. Samuelson, "Diagrammatic Exposition of a Theory of Public Expenditures," The Review of Economics and Statistics 36 (1954).

[26]Curry and Wade, pp. 70-73.

[27]Ibid., p. 73.

[28]David Easton, A Systems Analysis of Political Life (New York: John Wiley, 1965)

[29]David Easton, A Framework for Political Analysis (Englewood Cliffs, New Jersey: Prentice-Hall, 1965)

[30]See David Ricci, Community Power and Democratic Theory (Random House: New York, 1971)

[31]Wade and Curry, p. 62.

[32]William H. Riker and Peter C. Ordershook, An Introduction to Positive Political Theory (Englewood Cliffs, New Jersey: Prentice-Hall, 1973), p. 3.

[33]Samuelson, Economics, p. 25.

[34]See Anthony Downs, An Economic Theory of Democracy (New York: Harper, 1957).

[35]Kenneth A. Shepsle, "The Strategy of Ambiguity: Uncertainty and Electoral Competition," American Political Science Review LXVI (1972), 555-568.

[36]Donald E. Stokes, "Spatial Models of Party Competition," American Political Science Review LXVII (1963) pp. 368-370.

[37]Ibid., p. 368.

[38]See Melvin S. Hinich and Peter Ordeshook, "Plurality Maximization vs. Vote Maximization: A Spatial Analysis with Variable Participation," American Political Science Review, LXIV (1970) pp. 772-792.

[39]Downs, p. 70.

[40]Hubert M. Blalock, Theory Construction (Englewood Cliffs, New Jersey: Prentice Hall, 1962), p. 8.

[41]Ibid., Chapter 2.

[42]Gideon Sjoberg and Roger Nett, A Methodology for Social Research (New York: Harper and Row, 1968), p. 30.

[43]Many philosophers of science have described the working of the investigator under a paradigm of "covering laws" followed by observations, which are evaluated according to the covering laws. The result is a "scientific explanation." Although this "explanation" is preferred, it is not necessarily a "meaningful explanation." Actually what is offered is a kind of "reconstructed logic," put together after the fact but not truly descriptive of how the working scientist proceeds. See John G. Gunnell, "Deduction, Explanation, and Social Scientific Inquiry," American Political Science Review LXIII (1969), pp. 1233-1247; C. G. Hempel, "Studies in the Logic of Confirmation," in Aspects of Scientific Confirmation (New York: Free Press, 1965), pp. 3-51; May Brodbeck, "Explanation, Prediction, and Imperfect Knowledge," in May Brodbeck (ed.) Readings in the Philosophy of the Social Sciences (New York: Macmillan, 1968); Carl Hempel, Aspects of Scientific

Explanation (New York: Free Press, 1969); and Ernest Nagel, The Structure of Science (New York: Harcourt, Brace and World, 1961) provide the greatest overview of this position.

[44]Morton A. Kaplan, The Conduct of Inquiry (San Francisco: Chandler, 1964) p. 295.

[45]The "Contextualist" school of thought within the philosophy of science stress the fact that scientists do not operate under any governing law, deductivist model, but rather investigate certain problems under certain circumstances and render explanations which are meaningful outside the actual scientific endeavor. See Michael Scriven, "Logical Positivism and the Behavioral Sciences," in Peter Achinstein and Stephen F. Barker, (ed.) The Legacy of Logical Positivism (Baltimore: John Hopkins Press, 1969); Arthur S. Goldberg, "On the Need for Contextualist Criteria: A Reply to Professor Gunnell," American Political Science Review LXIII (1969), pp. 1247-1251; Stephen Toulmin, The Philosophy of Science (London: Arrow,1962); and Thomas Kuhn, The Structure of Scientific Revolutions (Chicago: University of Chicago Press, 1962) shows the limits at any one "scientific period effecting the deductivist model."

[46]See Thomas Kuhn, The Structure of Scientific Revolutions in the International Encyclopedia of Unified Science (Chicago: University of Chicago Press, 1962) for a discussion of the effect of an established "paradigm" within which the scientist must work.

CHAPTER III

OPERATIONALIZATION OF THE MODEL: HYPOTHESES AND RESEARCH DESIGN

While Chapter II developed the theoretical parameters within which to approach the research gaps outlined in Chapter I, the purpose of this section is to build a public choice model of community environment and expenditures, accompanied by a casting of verifiable verbal propositions which will outline the boundaries of the volume. Also, these statements will be translated into a form relating measurable indicators of control, independent, and dependent variables. While general methodological considerations will be discussed in depth, detailed analysis of the specific techniques employed will accompany later chapters.

The Development of Research Questions: Three Groups of Hypotheses

Prior to the actual construction of a workable model, there must be a concise statement of testable propositions derived from both the previous expenditure and policy studies, as well as those derived from the theoretical literature detailed previously. Furthermore, the above need to be framed in operational terms and implemented by the use of the best available indicators. The approach will involve a general topical hypothesis under each heading and the development of operational independent and dependent variables.

Governmental Form and Government Expenditures: The Temporal Dimension and the Dye Model

The major research questions left unanswered by the policy literature deal with testing the findings highlighted by Lineberry and Fowler, but in a context of the reaction of cities with reformed or unreformed structures to changes in their socio-economic environment. The question is not "Are reform governments different?" but "Do they react differently?"

Figure 3-1.--The Classic Policy Model: Environment, Political System and Policy

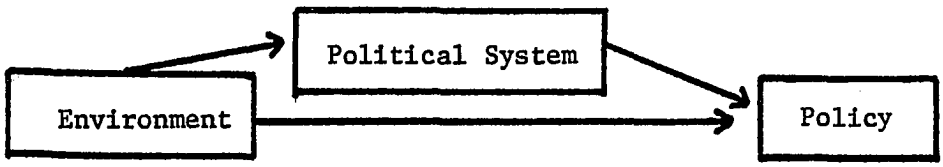


Figure 3-1 depicts the classic model for policy analysis as primarily developed by Dye in which the researcher seeks to determine the variation in the dependent variable which can be attributed uniquely to variations in the political independent variables. This model, however, assumes that the analyst is interested in isolating "unique" variance and specifying the nature of the relationship between the independent and dependent variables within the variance left "unexplained" by the socio-economic variables which are tacitly considered "prior" to both political structure and output measures. Rather than a process of "arrow testing" (Figure 3-1) which tests the relative importance of political versus non-political factors in determining policy, the focus of this investigation will be a comparison of system performance.

The position adopted here is that, as critics of the Dye model have noted,[1] conditions do not cause policy. In the classical sense any partialling technique fails to stastically approach existent conditions. Rather, the covariance of socio-economic conditions and policy output is a proper subject for examination. Different types of political systems (reformed, unreformed) will exhibit different patterns of covariance. The research question, as outlined in Table 3-1, is to examine how different types of structures react to different types of environmental pressures. In this way, prior influences on adoption of particular structures by differing cities removes the tautological dangers of the reformism debate.[2] It would be of little use to discover that those cities with homogeneous socio-economic environments tax and spend less, take on reformed structures and continue to tax and spend less, thus enabling the inference that reformed structures bring on less taxing and spending. If the structure is taken as a constant (control variable) within which the covariation between the independent variable (changes in environment) and dependent variable (changes in expenditure) can be analyzed, prior influences on structure and expenditure levels can be minimized. Table 3-1 demonstrates a tabular representation of this general research strategy. The relationship between spending and environment is subject to analysis under reformism as a control variable.

Varying levels of measurement can be employed to gauge the basic control variable (reformed structure). For instance, Lineberry and Fowler utilize a reformism index which they treat as an interval measure.[3] The independent and dependent variables will almost always be intervally scaled. Whichever level of reformism measurement is employed, however,

Table 3-1.--Tabular Representation of the Major Research Areas: Reformism as Control Variable

Changes in Expenditure Level	Unreformed Government			Reformed Government		
	More Homogeneous Environment	Unchanged Environment	More Heterogeneous Environment	More Homogeneous Environment	Unchanged Environment	More Heterogeneous Environment
Less Expend.						
Same Expend.						
More Expend.						

the research approach here will be to examine the behavior of different types of urban political systems in response to varying pressures from a changing environment. The major indicators of political output will be the pattern of changes in trends of taxation and spending.

The first set of hypotheses is drawn from the above discussion in light of the traditional urban policy literature described in Chapter I.

Hypotheses:

Group 1_A

(A) Since the literature indicates a greater responsiveness on the part of non-reformed governments, those cities with non-reform structures will exhibit more response to socio-economic environmental change than their reformed counterparts, with regard to functional expenditures.

(B) Since reformed structures are more "efficient" than unreformed structures, increases in expenditures in the former will be more closely tied to increases in taxation.

The state policy literature indicates a possible tendency for policy makers, through their interaction, to follow the policy guidance of both regional and national policy leaders.[4] This fact, when coupled with the "regional ethos" explanation offered by Wolfinger and Field,[5] offers other general hypotheses.

Group 1_B

(C) City expenditure patterns will tend to become more alike within regions over time.

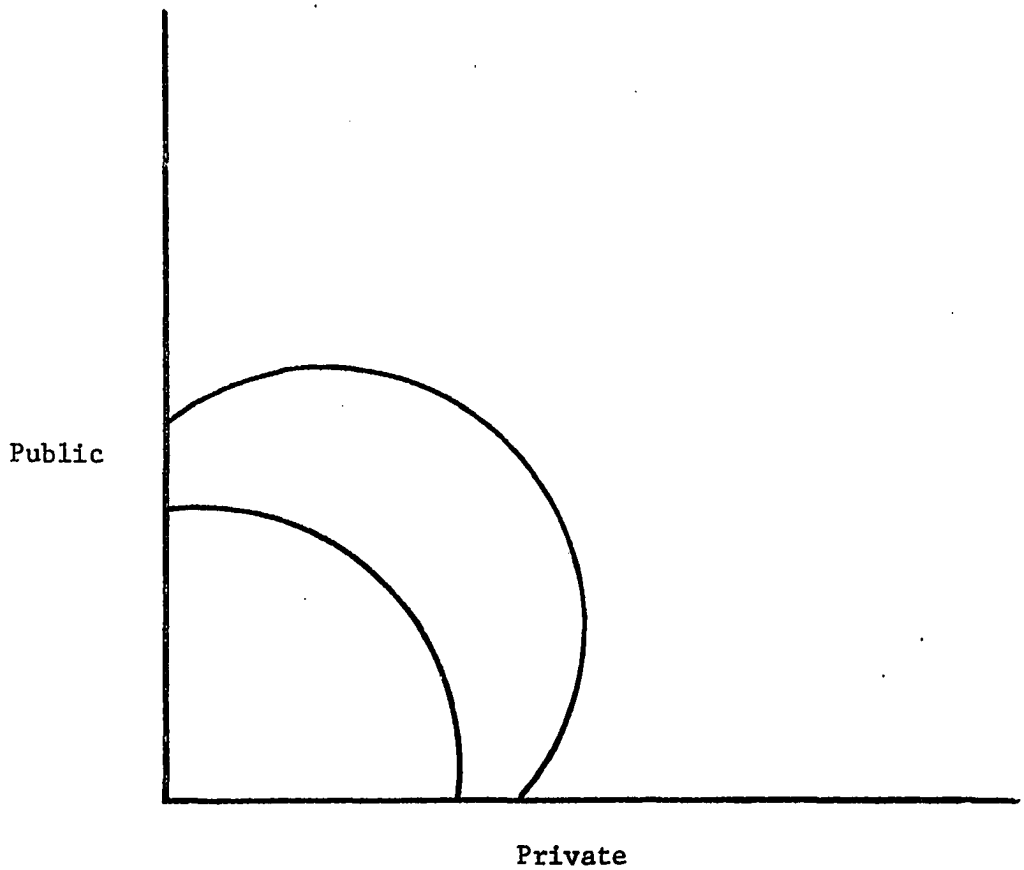
Expenditures and Public Choice Models: General Hypotheses

The research questions posed above, while effective measures of political system activity within the context of differing structures and environments, cannot tap the basic parameters of the political system: its scope relative to the community economy. Theoretically, local governments, through taxation and spending, can enlarge their economic sphere to include almost all economic activity, and even with the institutional and cultural limits placed by national, political, social, and historical norms, a wide room for variation exists. The basic research question relative to this section and derived, not from political research, but from public choice theory, is:

> Do different types of local political systems act differently by increasing their "extractive" and "distributive" capabilities; more specifically, by enlarging their "public sector?"

Figure 3-2 shows community indifference curves for two cities. The curved line closer to the axes formed by the "public" and "private" lines indicates the mixes of public and private economic activity possible for cities with smaller economies. The longer curve depicts the same for larger cities. Although different curves exist for different total economies, cities will differ within each economic group relative to their points on the curve. The research strategy is, therefore, an examination of which kinds of social and political forces determine placement on the curve.

Figure 3-2.--A Public Choice Depiction of Two Cities' Economies



Larger cities will have curves further from the origin.

Another set of hypotheses follows from the above discussion.

Hypotheses:

Group 2

(A) Cities with reformed structures will show a tendency toward a smaller public sector than those with unreformed structures.

(B) As stress in the environment increases over time, cities will show a tendency toward an "equilibrium" government spending limit relative to their total.

Electoral Competition and Bargaining: General Hypotheses

The third focus of analysis involves an effort to assess the effects of political factors of the governmental form on policy variation by including a measure of local political competition in the model. Again, concerns stem not so much from generated findings as from general theory, in this case a mixing of the "competition" writings of Riker and Ordeshook[6] and the public choice theories.

Public policy research to this point has omitted any real consideration of policy measures as the direct result of previous political activity. The view adopted here is that there is a means to gauge the performance of governments in terms of the conditions surrounding their elections and electoral climate. This enables a test of propositions regarding the behavior of "reformed" and "unreformed" structures and their relationship with the electorate.

Hypotheses:

Group 3

(A) The existence of a more competitive local political environment should accompany that of unreformed structures.

(B) The more competitive the local political environment, the larger the "public" sector of the economy. (In bargaining for votes in a pluralist, competitive "market," public goods are offered.)

(C) The less competitive the local environment, the less taxation (and expenditure) can be expected. (A middle class, non-competitive environment would reward appeals to keep taxing and spending down and economic activity private.) Reformed Government.

(D) If a competitive condition exists at Time (A) expenditures should demonstrate an increase at Time (A+10). Unreformed Government.

The above hypotheses are unique in their treatment of the temporal dimension of the functioning political system.

The next task will be the development of a model of municipal expenditure analysis through which the above hypotheses can be tested.

Figure 3-3 depicts a general working model of the changing political economy in relation to the changing socio-economic and political environment. Points of investigation (P...) demonstrate the relationship between the various groups of hypotheses.

P_0 = Governmental Form--The basic control independent variable (Group 1-A)

P_1 = The perceptions of and response of local decision makers to regional and national trends (Group 1-B)

P_2 = The expansion of government into the community economic space and relative functional changes (Group 2)

P_3 = The appeals made to the electorate by those holding and competing for office in order to attain public office (Group 3)

P_4 = The reaction of decision makers to a changing socio-economic environment

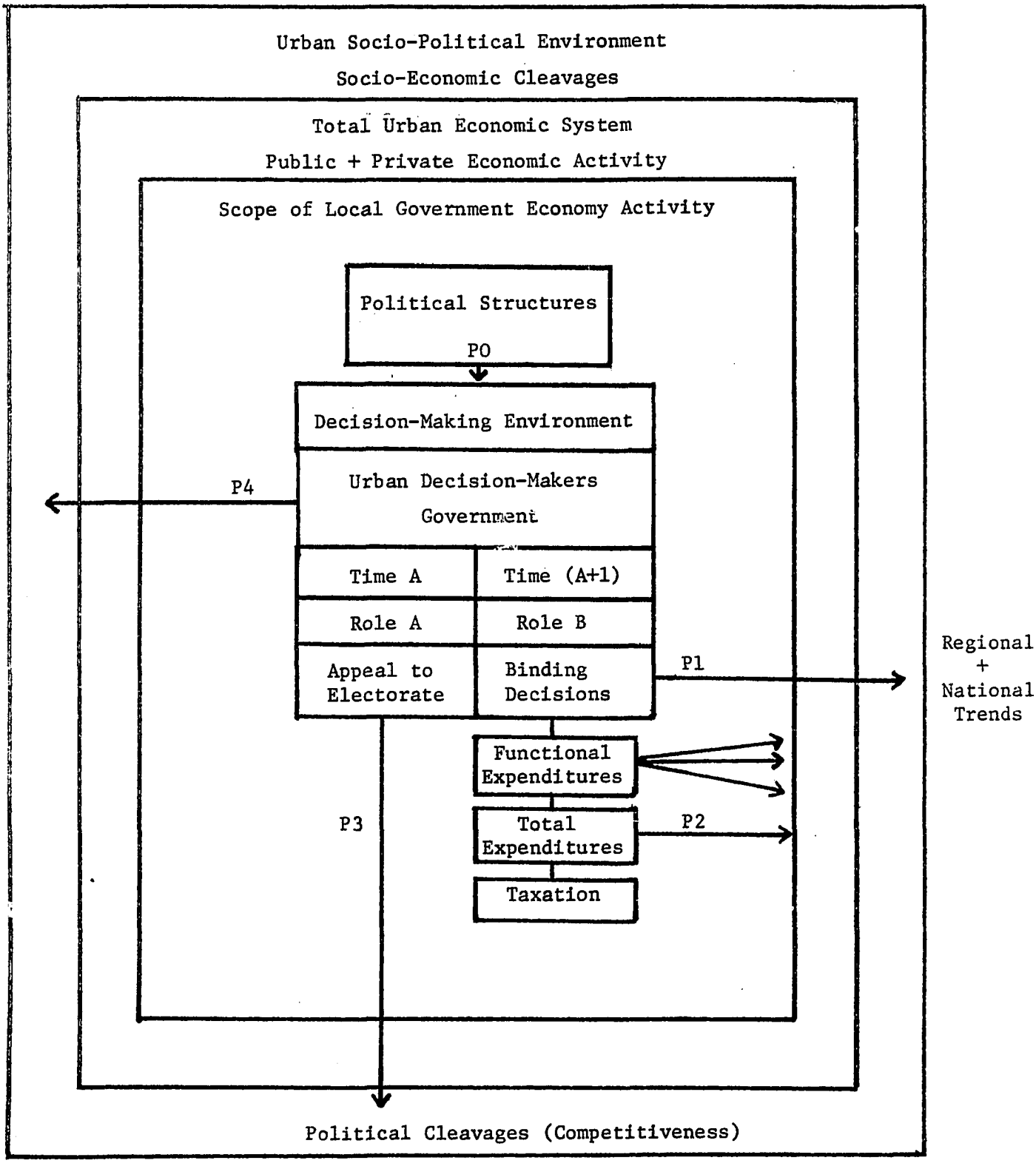
Generally, the dependent variable will be P_2, and it can be considered a function of P_1 and P_3 with differing patterns exhibited for variations of P_0. In equation form . . .

For P_0 (reformed) P_2 time (A+1) = P_1-B (Time) + P_3 (Time A) + P_4 (eq. #1)

For P_0 (unreformed) P_2 time (A+1) = P_1-B (Time) + P_3 (Time A) + P_4 (eq. #2)

Verbally: The expansion of the Government into the urban economy is a function of national and regional trends as perceived by decision

Figure 3-3.--The Urban Political System: A Temporal Model



makers and dictated by the increasing homogeneity of the national political culture, enactment of appeals made at previous elections, and changes in the socio-economic environment. Because it is hypothesized (Group 3) that reformed, non-competitive structures encourage appeals for less spending, P_3 should be negative value for (eq. #1), while positive for (eq. #2).

This conception of the urban system is a hybrid of general systems and structural-functional approaches. The political system can be best seen in its movement into the total urban economic space, and the nature of this movement can best be measured by the operation of the extractive and distributive functions. The systems concept provides a framework in which to envision changes in both environment and political activity, whereas the functional examination offers reliable indicators for comparison.

Selection of Cities

The first consideration must be the choice of cities. The maximum number of cities was sought consistent with the availability of data. The main source of city political and economic measures is the County and City Data Book.[7] Data availability has increased sharply beginning with the volumes following the 1950, 1960 and 1970 census efforts. Prior to 1950, information concerning cities makes analysis of this type impossible. The County and City Data Book includes information for cities above 25,000. Hence for a city to be subject to analysis from 1950 through 1970, it must have had a population of at least 25,000 for all three periods. Other sources of data include cities of 50,000 population in 1960. The criteria for the selection of cities for this analysis, therefore, requires a

population of at least 25,000 in 1950 and 50,000 in 1960. These restrictions provide 285 cities; all cities fitting the above are included in the analysis. Statistical analysis, therefore, will not be inferential, as the 285 cities represent a population of all cities just described. Throughout this volume tests of significance will not be employed, however, amounts of variance explained and unexplained by sets of independent variables will be given. Significance of statistical tests must be considered relative to other constructs and to a degree of explanatory power substantively significant within the contest of explanation.

Selection of Variables

The initial selection of variables from the hundreds of measures listed in the County and City Data Book was based upon the criteria of usefulness, relevance to the hypotheses, and comparability. This led to a search for a range of socio-economic and economic descriptors suggested by previous research and the hypotheses of this chapter. The information available for the three census periods revealed a paucity of comparable independent and dependent variables. In order to meet a goal of maximum comparability the ICON (index construction) program of the OSIRIS statistical package was employed.[8] Only when variables were of absolute importance was the comparability criterion waived and variables unavailable for one time period computed for the other two. This step was necessary for certain expenditure items.

Table 3-2.--City Background and Output Measures

Region

State
Geographical Region (census-4)
Elazar's Political Culture (Sharkansky)

Political Process - Politization

Number of Mayors 1960-1970
Percent Registered Voting (60)
Percent Adults Voting (60)

City Type (1960)

Employing City - presence/absence
Dormitory City - presence/absence
Balanced City - presence/absence
Central City - presence/absence
Independent City - presence/absence
Suburb - presence/absence

Political Climate (County)

Percent Democratic - President 1960
Percent Republican - President 1960
Percent Republican - President 1964
Percent Republican - President 1968
Percent AIP - President 1968

City History

City Age (years)
Year City reached 10,000 population
Year City reached 20,000 population

Political Output

Size Planning Staff - 1960
Year of First Poverty Program
Year of First Housing Project
Floridation Action - absence/presence
Administration Floridation Action presence/absence
Floridation Rejection - absence/presence
Date of first HUD Application
Date of first HUD Contract

Political Culture (1960)

City Run School System (1950) - absence/presence
Mayor-Council - absence/presence
City Manager - absence/presence
Had Partisan Election - absence/presence
Number City Councilmen
Number of City Council at Large
Percent of City Council at Large

The aforementioned variables were combined with city background variables, most of which were gathered from the Alford and Aiken[9] and Bingham[10] data sets. As shown in Table 3-2, these include regional, historical and structural characteristics of each city, as well as political structure, process, electoral climate, and output measures. Table 3-3 includes measures of the state's socio-economic and political environment and are included for two reasons: (1) to provide a test of the relationship of "within state variation" to "between state variation"; and (2) to operationalize a behavioral dimension which captures state Progressivism.

Table 3-3.--State Socioeconomic and Political Environmental Measures For Each City

Socioeconomic	Political
Affluence Factor Score - 1960	Interparty Competition
Affluence Factor Score - 1970	Innovation (Walker)
Affluence Change (1960-1970)	Redistribution (Booms and Halderson)
Industrialization Factor Score 1960	Legislative Professionalism (Grumm)
Industrialization Factor Score 1970	Legislative Responsiveness (Sutton)
Industrialization Change (1960-1970)	

Table 3-4 contains the census independent variable set, divided into socio-economic conditions, employment descriptors, housing conditions, and economic activity sections. All variables from the three census periods were subject to a five-fold expansion prior to any further analysis. Besides the three time periods (1950, 1960, 1970), also the change in the measure was computed twice (1950-1960) and (1960-1970). Table 3-6 shows this expansion.

Aside from the total expenditure and selected functional expenditure totals each dependent variable (Table 3-5) is figured on a per capita and percentage of total expenditure base for functional items. Revenue variables, though usually employed as prior to expenditure and thus an independent variable, is considered "dependent" on socio-economic and city type variables. Certain functions are considered in tandom only because of data availability considerations. Dependent variables are expanded in the same manner as the census independent measures. (See Table 3-6.) While the initial dataset will include all aforementioned variables, those included in the working model will be much fewer. At all times the deletion of variables will be clearly described and justified.

Methodological Considerations

While the items in Tables 3-2 and 3-3 will be employed as displayed, each of the subsets shown in Table 3-6 will be factor analyzed[11] separately with the outcome "reduced" clusters of variables, each independent of other clusters from the same group. In effect new concise measures are created summarizing a multiplicity of related variables. The desired result is a simplicity of description accounting for an acceptable amount of variation among the measures. Principal components[12] of each group are thus obtained with the ideal a tradeoff between simplicity and explanatory power. Wherever possible within the above constraints, an equal number of factors will be extracted from each group. The relationships among the factors of the different time periods will allow a concise description of the dimensions of change among independent variables and

Table 3-4.--Socioeconomic, Employment and Economic Activity Measures 1950, 1960, 1970

Socioeconomic	Economic Activity
Population	Number of Retail Trade Establishments
Population Rank	Retail Trade Sales
Percent Black Population	Retail Food Sales
Percent Population Increase (1950, 1960) (1960-1970)	Percent Retail Trade in Food
Percent Black Population Increase (1950, 1960) (1960-1970)	Eating and Drinking Sales
Land Area	Percent Retail Sales in Eating and Drinking
Density	Wholesale Trade Sales
Percent Under 5 Years Old	Number Manufacturing Establishments
Percent Under 65 Years Old	Value Added by Manufacturing
Median Age	Number Employed in Manufacturing
Birth/1000 Population	Manufacturing Salary and Wages
Deaths/1000 Population	Number Production Workers
Number of Families	Production Workers' Salary and Wages
Median Family Income	Bank Deposits (1950, 1960)
Percent Below Low Income (2,000-1950; 5,000-1960; 7,500-1970)	Bank Demand Accounts (1950, 1960)
Percent Above High Income (5,000-1950; 10,000-1960; 15,000-1970)	Aggregate City Income (1960, 1970)
Percent Under Grade School Education	Per Capita Income (1960, 1970)
Percent Over High School Education	
Log (population)	
Hospitals/1000	
Hospital Beds/1000	

Employment	Housing Conditions
Number Civilian Labor Force	Number of Housing Units
Number Employed Civilian Labor Force	Median Rooms/Unit
Percent Employed in Construction	Percent Units Under 10 Years Old
Percent Employed in Manufacturing	Number of Occupied Units
Percent Employed in White Collar Occupations	Percent Owner Occupied Units
Employee/Population Ratio	Median Value of Owner Occupied Units

Table 3-5.--Revenue and Expenditure Measures (1950-1960-1970)

Expenditure - City Government
Total Expenditure
Expenditure Per Capita
Public Safety (fire and police) Expenditures
Public Safety Percent of Total Expenditure
Public Safety Per Capita Expenditure
Education Expenditure
Education Percent of Total Expenditure
Education Per Capita Expenditure
Public Welfare Expenditure
Public Welfare Percent of Total Expenditure
Public Welfare Per Capita Expenditure
Health and Hospitals Expenditure (1950, 1960)
Health and Hospitals Percent of Total Expenditure (1950, 1960)
Health and Hospitals Per Capita Expenditure (1950, 1960)
Highways Expenditure (1960, 1970)
Highways Percent of Total Expenditure (1960, 1970)
Highways Per Capita Expenditure (1960, 1970)
Sanitation Expenditure (1960, 1970)
Sanitation Percent of Total Expenditure (1960, 1970)
Sanitation Per Capita Expenditure (1960, 1970)
City Payroll Per Capita
Number of City Employees Per Capita
Revenue - City Government
Total Revenue
Revenue Per Capita
Taxes
Property Taxes
Taxes Per Capita
Intergovernmental Revenue
Percent Revenue Intergovernmental
Per Capita Intergovernmental Revenue

allow for one to compare dimensions of independent variable change with changes in dependent variables.

Table 3-6.--Expansion of the Census Variable Sets Into Change Measures

Original Measures	Change Measures
1950 value	1960 value - 1950 value
1960 value	1970 value - 1960 value
1970 value	

Factor analysis will not be performed on the dependent variables; any gain in parsimony will not offset a loss in the precision demanded here. The major dependent variable salient to the outlined hypotheses are spending measures relative to the communities total wealth (GNP surrogate). Percentage figures which tap the within-community distribution of spending are subject to separate analysis.

Control Measures: Avoiding Fallacy

Recently concern has been expressed regarding the potential fallacy of examining expenditure variations between cities because of the differing responsibilities of cities relative to the county in which the city is located. In addition, states vary in their assignment of state-local expenditure responsibility. The main item thus affected is school expenditure. Many cities do not run their own school systems, but lie within independent school districts which collect revenue and administer schools separately. Since education expenditures are such a substantial proportion of total expenditures, cities within these independent districts

will show correspondingly less total expenditure. Leibert[13] has shown that although similar responsibility variation occurs in welfare, highways, and hospital expenditures, the presence or absence of a city-run school system acts as an acceptable "surrogate" for city responsibility for these items. Hence, the nature of a city's school system takes on enormous power of explanation.

The best available indicator for the above distinction is the nature of the city's school system in 1950. It is safe to assume that few, if any, cities changed the legal responsibility for education within the twenty year period under consideration. This information was used to create a variable "presence or absence of city-run schools," coded 1 or 0 for inclusion in these respective categories. This "dummy" variable[14] can be used as a control in which case cities in one category are analyzed separately from cities in the other. In certain cases this measure can be employed as an independent variable in multiple regression analysis.[15] However, one is in danger of falling into a pit of tautologies if utmost care is not taken in the latter case. For instance, it would be of little use to predict less total expenditures in cases where the major functional expenditure item is absent.

Here it must be noted that it is difficult to make comparisons between cities relative to expenditures on any functional expenditure breakdown because of jurisdictional differences. Therefore the major emphasis of this work will be on change. In a real sense cities are compared relative to their own past spending and fallacies of false comparability are avoided. Likewise, the performance of "reformed" versus "unreformed" structures can be accurately gauged. The problem is clear;

since certain cities tend to adopt reform structures can differences in performance found at a given point in time be fairly attributed to those structures? Or are these structures, like their performances, indicators of patterns of behavior manifest by a category of municipalities? By measuring change only prior influences are, in effect, cancelled out. The question is not whether cities are different, but whether they react differently.

Other control measures must be used to guard against inferring causal relationships between sets of variables at the wrong level of analysis. These include region and governmental form. Often statistical control cannot unravel tangled patterns of causal relationships (note the Wolfinger and Field versus Lineberry and Fowler controversy), but careful partitioning of variance, (accompanied by explicit theorizing) will minimize commission of logical fallacies. Also included in the control variable set (and also available for multivariate model building) is a measure of the "exploitation thesis" mentioned in Chapter I--the employee-population ratio. Combinations of these control variables will enable within and between-group analysis of independent variable-dependent variable covariation.

Organization of the Study

The remaining chapters will focus upon in-depth analysis of the relationships discussed in this chapter.

Chapter IV will concentrate on isolating the dimensions of socio-economic change from 1950 to 1970 and relating this change to the political, historical, and control variables displayed in Table 3-1.

The total socioeconomic picture of the cities from 1950 to 1970 will be analyzed. The purpose of Chapter IV in short, will be to provide a concise a description as possible of the changing conditions of the American city.

Chapter V will attempt an exhaustive study of regional trends among dependent variable measures. The purpose here shall be to see if cities are in fact becoming "more alike" both nationally and regionally.

Chapter VI will test the major hypotheses of the study--the differing behaviors of reformed versus unreformed structures in response to the changing environment depicted in Chapter IV. Chapter VII will consist of a listing and evaluation of our hypotheses and will attempt to place the findings of this study into the perspective of relevant literature.

NOTES

[1]See especially Phillip Coulter, "Comparative Community Politics and Public Policy: Problems in Theory and Research," in David R. Morgan and Samuel A. Kirkpatrick, eds., Urban Political Analysis (Free Press: New York, 1972), pp. 370-382.

[2]Again reference is to the actual causes of manifestations of reformed structures. Raymond Wolfinger and John Field, "Political Ethos and the Structure of City Government," American Political Science Review LV (1966), 306-326.

[3]Robert L. Lineberry and Edmond P. Fowler, "Reformism and Public Policies in American Cities," American Political Science Review LVI (1967), 701-716 utilize a reformism score which consists of the number of "reformed" structures a city possesses.

[4]The diffusion of innovations is a present point of controversy, notably the rate and nature of diffusion. See Jack L. Walker, "The Diffusion of Innovations in the American States," American Political Science Review LVIII (1969), 880-889, and Virginia Gray, "Innovation in the States," American Political Science Review, LXVII (1973).

[5]Wolfinger and Field, p. 715-716.

[6]William H. Riker and Peter C. Ordeshook, An Introduction to Positive Political Theory (Englewood Cliffs, New Jersey: Prentice Hall, 1973) and the work cited in Chapter II.

[7] Bureau of the Census, The County and City Data Book (Washington D.C.: Government Printing Office) is a compendium of selected items for states, regions, cities and counties published every five years.

[8]See Osiris III (Ann Arbor, Michigan: Center for Political Studies, 1973), pp. 317-347.

[9]Michael Aiken and Robert R. Alford, "Community Structure and Innovation: The Case of Public Housing," American Political Science Review LXIV (1970),843-864 have made available background variables for the above study, utilized in Table 3-1.

[10]Richard D. Bingham,"Federal Grants to Local Governments: Patterns of Use and Effects of Public Housing and Urban Renewal," Ph.D. dissertation, University of Oklahoma, 1973.

[11]Factor analysis has two major purposes: (1) A description of dimensions underlying a phenomenon; and (2) Creation of new measures for use in later analysis. See Harry H. Harmon, Modern Factor Analysis (Chicago: University of Chicago Press, 1970), Chapters 1-2.

[12]Principal components analysis is the method of factoring a correlation matrix with unities in the diagonals.

[13]Roland Leibert, "Municipal Functions, Structures and Expenditures," Social Science Quarterly LIV (1974), 765-783.

[14]Dummy variables are dichotomous indicators indicating the presence or absence of an attribute. In special cases this is an "interval" level of measurement. See Hubert M. Blalock, Social Statistics 2d ed. (New York: McGraw-Hill, 1972), pp. 498-502.

[15]Multiple regression analysis considers a number of intervally measured independent variables taken together to predict variance in an interval dependent variable. See N. R. Dryer and H. Smith, Applied Regression Analysis (New York: John Wiley and Sons, 1966), chapters 5-10.

CHAPTER IV

DIMENSIONS OF SOCIOECONOMIC CHANGE IN AMERICAN CITIES FROM 1950-1970

Chapters I through III have established the parameters of the study of public choice in the urban political system. The system is constantly adapting itself to its changing environment. Before the changes in political system variables can be properly gauged, therefore, it is necessary to fully describe the socioeconomic climate at each time period as well as to fully understand the nature and pattern of changes occurring within the entire time period (1950 to 1970). This chapter will fully describe the dynamics of change in the urban social and economic environment during this twenty year span.

A Methodology of Social Change

The researcher attempting an exhaustive description of social and economic conditions is immediately struck by a plethora of indicators; some are obviously crucial (percent nonwhite), while numerous others seem minor variations on the same social theme (median school years and percent completing high school). The situation confronting a time series analyst is compounded by slightly differing measures at different time periods. The goal here is to obtain comparable measures at each of the three census periods, measures which encompass as wide a range of social and economic phenomena as possible in as parsimonious a form as possible. Table 3-4 contains the complete list of social and economic indicators

collected for the study. Three variables are of paramount importance in light of findings highlighted in Chapter I. These are population, employee/population ratio, and percent nonwhite.[1] These will be included in their existing form in analyses of each period. Twenty-two other variables are available at each census. Here one must confront methodological roadblocks and theoretical considerations which prevent arbitrary choosing of indicator variables from these twenty-two.

The first step is a reduction of this mass of independent variables by a mathematically sound criterion. There are two reasons for following this strategy. First, it makes little sense to choose a measure, and use it in "causal" terms when it could just have easily been replaced by a similar measure. Second, a mathematical reduction of a highly intercorrelated group of measures to a smaller, unrelated, statistically independent set, circumvents the problem of multicollinearity.[2] Since later analyses will relate political consequences to social and economic causes we must think in terms of the usefulness of the reduced variable set of predictors in a regression equation. When regression techniques are employed the elements of the left side of the equation should be largely independent or unrelated to each other, or kept "orthogonal" to each other so that the effects of each variable can be gauged uniquely. The technique of factor analysis can be used to "reduce" the twenty-two variables to a more manageable set. The researcher using this technique to create new variables is still confronted with problems, however. He must choose between a larger number of variables which capture a larger amount of the variance of the original set or a smaller number of more parsimonious indicators which capture less of the original variation. Since we are looking for optimum

comparability between time periods an equal number of factors extracted from each census is a further consideration. There are numerous computer algorithms which aid in this decision. One, Kaiser's criterion,[3] stops extracting factors when the lambda value falls below 1.000. Table 4-1 shows that the lambda statistic falls below this figure after five factors for 1950 and 1960 and six in 1970. Other options include the scree technique,[4] which allows a visual scanning of the amount of variance explained by each factor extraction and subsequent ceasing of factoring when the percent of variance explained by the succeeding factoring falls off sharply. Table 4-1 shows this point to occur after four factors. The judgment here is that the additional 4 to 5 percent added by the fifth factor does not outway the loss of simplicity that the additional dimension would entail. Thus the twenty-two variables are reduced to four measures from each time period. The three additional aforementioned variables have been held out of this procedure because their implementation as distinct measures is desired.

1950, 1960, and 1970 Four Factor Solutions

The resulting four factor solutions from the above analyses can be seen in Tables 4-2, 4-3, and 4-4. The solutions are quite similar; in fact they suggest the same labeling of each dimension. The first column represents an "Income Factor" (the higher loadings within the boxes represent correlations of the variable with the factor). Educational measures also load on this factor. In all three census periods wealthy cities with a more highly educated populace tend to co-occur as do poorer, less educated cities. In 1960 (Table 4-3) these cities also have a high proportion of white collar workers, whereas in 1950 and 1970 (Tables 4-2 and 4-3) white

Table 4-1.--Principal Components for 1950, 1960 and 1970 Factor Analysis of Twenty-Two Independent Variables (employment/population ratio, population, percent non-white omitted from analysis): Criteria for Choice of Solutions (1-6 Factors)

	Lambda			Percent of Explained Variance			Cumulative Percent		
	1950	1960	1970	1950	1960	1970	1950	1960	1970
1	5.909	5.803	5.337	26.86	26.83	24.26	26.86	26.38	24.26
2	4.359	5.803	5.124	19.81	24.85	23.29	46.67	51.22	47.55
3	3.320	2.659	2.621	15.09	12.09	11.92	61.77	63.31	59.47
4	1.844	1.780	2.000	8.38	8.09	9.09	70.15	76.07	68.56
5	1.059	1.029	1.257	4.82	4.68	5.71	74.96	80.47	74.28
6	0.932	0.967	1.020	4.24	4.40	4.64	79.20	80.47	78.91

Table 4-2.-- Varimax Factor Analysis of Twenty-Two Independent Variables for 1950 (minus population, percent non-white, employment/population ratio)

	Income	Age	Employment	Density	H^2
Land Area	-0.01440	0.04198	-0.16348	0.30275	.12035
Median Family Income	0.92228	0.01641	0.27199	-0.01120	.92496
Percent Below Low Income	-0.78520	0.01781	-0.49548	0.04378	.86427
Percent Above High Income	0.91139	0.05576	0.10738	0.08679	.85280
Median School Years	0.75633	-0.07825	-0.46080	-0.23829	.84733
Percent Under Grade School	-0.74042	0.29165	-0.00807	0.28737	.71588
Percent Over High School	0.78402	-0.10584	-0.42446	-0.19865	.84552
Median Value Owner Occupied Unit	0.76574	-0.09207	-0.03243	0.40942	.76350
Percent Under 5 Years of Age	-0.22726	0.79340	-0.01362	-0.36158	.81206
Percent Over 65 Years of Age	0.13798	-0.90942	-0.07826	-0.06306	.85618
Median Age	0.39464	-0.78004	0.02096	0.24855	.82641
Births/1000	-0.28539	0.42739	-0.22959	-0.38942	.46874
Deaths/1000	-0.29923	-0.80691	-0.04945	-0.00304	.74310
Percent Units Under 10 Years Old	0.21679	0.67678	-0.45201	-0.21750	.75664
Percent Retail Trade (food)	0.34030	0.09803	0.57645	0.21900	.50567
Percent Employed at Construction	0.01547	0.34262	-0.69907	-0.15207	.62946
Percent Employed at Manufacturing	0.01837	0.00408	0.90736	0.07837	.82958
Percent Employed as White Collar	0.17253	-0.18140	-0.84839	0.24161	.84080
Median Rooms/Unit	0.29306	-0.37329	0.58650	-0.25179	.63257
Density	0.01241	-0.21891	0.24633	0.62956	.50510
Percent Owner Occupied	0.32888	0.10037	0.09816	-0.74524	.68327
Percent Retail Trade (eating, drinking)	0.05176	-0.15524	0.12695	0.60376	.40792
Percent of Total Variance	25.04	22.56	14.17	8.38	70.15

Table 4-3.--Varimax Factor Analysis of Twenty-Two Independent Variables for 1960 (minus population, percent non-white, employee/population ratio)

	Income	Age	Employment	Density	H^2
Land Area	0.04691	0.22199	-0.18473	-0.26609	.15641
Median Family Income	0.82248	-0.06379	0.50395	0.05447	.93748
Percent Below Low Income	-0.64420	0.05638	-0.64245	-0.12911	.84732
Percent Above High Income	0.88126	-0.08254	0.23367	-0.09116	.84635
Median School Years	0.84719	0.14732	-0.24868	0.21274	.84654
Percent Under Grade School	-0.67173	0.17357	-0.17068	-0.34200	.62744
Percent Over High School	0.88244	0.14776	-0.28795	0.16411	.91039
Median Value Owner Occupied Unit	0.74574	-0.19271	0.19604	-0.42323	.81081
Percent Under 5 Years of Age	-0.25920	0.85699	0.02198	0.16366	.82899
Percent Over 65 Years of Age	0.02860	-0.90929	-0.11225	-0.00284	.84023
Median Age	0.17231	-0.90232	0.08756	-0.11512	.86479
Births/1000	-0.24990	0.75656	-0.13740	0.01003	.65382
Deaths/1000	-0.34823	-0.84786	-0.03300	-0.01904	.84158
Percent Units Under 10 Years Old	0.43360	0.63525	-0.32196	0.05876	.69886
Percent Retail Trade (food)	0.02866	0.08514	0.65135	0.04505	.43434
Percent Employed at Construction	0.07364	0.45494	-0.63793	0.05449	.62232
Percent Employed at Manufacturing	-0.02953	-0.02261	0.84811	0.09115	.72897
Percent Employed as White Collar	0.83479	-0.06418	-0.32177	0.03713	.81429
Median Rooms/Unit	0.04429	-0.18401	0.21728	0.72844	.61366
Percent Owner Occupied	0.26107	0.34200	0.15907	0.73315	.74793
Density	-0.08384	-0.40117	0.34150	-0.49680	.53140
Percent Retail Trade (eating, drinking)	-0.04552	-0.35678	0.20106	-0.57722	.50298
Percent of Total Variance	24.17	22.70	12.10	12.43	71.40

Table 4-4.--Varimax Factor Analysis of Twenty-Two Independent Variables for 1970 (minus population, percent non-white, employee/population ratio)

	Income	Age	Employment	Density	H^2
Land Area	0.00141	0.18300	-0.24780	-0.01358	.15464
Median Family Income	0.92098	0.03100	0.28184	0.01673	.92887
Percent Below Low Income	-0.85872	-0.06427	-0.40739	0.07819	.91362
Percent Above High Income	0.90677	-0.02686	0.04641	0.16962	.85387
Median School Years	0.75760	0.01396	-0.42650	-0.26873	.82827
Percent Under Grade School	-0.70426	0.19077	-0.01351	0.30663	.62657
Percent Over High School	0.79906	0.02158	-0.46814	-0.14544	.87927
Median Value Owner Occupied Unit	0.74203	-0.01137	-0.00067	0.49636	.80360
Percent Under 5 Years of Age	-0.28106	0.81046	0.11159	-0.17350	.77839
Percent Over 65 Years of Age	-0.08351	-0.88886	0.05001	0.21158	.84432
Median Age	0.08568	-0.86702	0.14989	0.23440	.83672
Births/1000	-0.45793	0.62784	-0.14587	0.06672	.62961
Deaths/1000	-0.41179	-0.77623	0.14338	0.18396	.82651
Percent Units Under 10 Years Old	0.26040	0.40375	-0.67571	-0.04051	.68905
Percent Retail Trade (food)	0.11236	0.08142	0.53367	-0.03315	.30536
Percent Employed at Construction	-0.26068	0.13007	-0.60866	-0.22023	.50385
Percent Employed at Manufacturing	-0.06610	0.08500	0.88007	-0.08316	.79147
Percent Employed as White Collar	0.03779	0.42629	-0.11905	-0.54341	.64262
Median Rooms/Unit	0.05540	0.01449	0.21096	-0.72977	.58034
Percent Owner Occupied	0.10751	0.12912	-0.02892	-0.87988	.80326
Density	0.01356	-0.16162	0.44159	0.64794	.64114
Percent Retail Trade (eating, drinking)	0.02336	-0.29975	0.05253	0.52742	.37133
Percent of Total Variance	24.98	18.97	18.84	10.38	68.51

collar employment is unrelated to the wealth and education of a city. The second factor in each set is an "Age" factor, which ranges from cities with an older population and a higher proportion of deaths to a younger population living in new structures. Note, however, that by 1970 the age of the housing units has become less related to the age of the population than to the third factor labeled "Employment." This factor ranges from cities with a high proportion of the work force in construction to those with many employed in manufacturing. (These latter cities have a greater proportion of their retail trade in food.) The final factor is a housing factor labeled "Density." Generally this represents a dimension ranging from crowded rental living quarters to owner occupied private housing. These four dimensions can be thought of as simplified measures of these described social and economic conditions. Later factor scores, or equations weighted by the strength of the loading of each variable on a factor, will be used as independent predictors in regression equations.[5]

The Changing Socio-economic Environment: 1950-1960 and 1960-1970

While the three factor analyses have enabled us to impose identical names on each corresponding factors, there have been subtle changes which, in fact, indicate that "Income" in 1960 taps a slightly different phenomenon than it did in 1950. Actually, an accurate comparison of dimensionality between any two of the census periods must involve more than a mere exemination of varying factor loadings on relatively corresponding dimensions because the loadings are not correlations with exactly the same phenomena. What is needed is a comparison of loadings relative to exactly the same dimension. Tables 4-5 to 4-8 summarize the changes in each of

Table 4-5.-- Shifting Patterns of Dimensionality (1950-1960): 1960 Variables in Terms of 1950 Dimensions for Component Variable Set

1960	Income (50)	Age (50)	Employment (50)	Density (50)	H^2
Land Area	-.058	.116	-.281	.201	.136
Median Family Income	.901	-.010	.223	-.068	.866
Percent Below Low Income	-.788	.043	-.406	.100	.797
Percent Above High Income	.861	.013	-.048	.048	.746
Median School Year	.666	.045	-.456	-.316	.753
Percent Under Grade School	-.682	.271	.010	.346	.465
Percent Over High School	.663	.044	-.515	-.308	.707
Median Value	.738	-.050	-.083	.374	.640
Percent Under 5 Years Of Age	-.341	.534	.019	-.385	.550
Percent Over 65 Years Of Age	.118	-.827	-.017	.188	.698
Median Age	.319	-.685	.102	.338	.696
Births/1000	-.359	.463	-.138	-.292	.448
Deaths/1000	-.209	-.776	.171	.240	.733
Percent Units Under 10 Years Old	.194	.471	-.517	-.320	.527
Percent Retail Trade (food)	.179	.228	.528	.080	.362
Percent Employed At Construction	-.161	.253	-.641	-.226	.448
Percent Employed at Manufacturing	.213	.015	.722	-.054	.570
Percent Employed As White Collar	.661	-.049	-.500	-.097	.699
Median Rooms Per Unit	.110	-.193	.352	-.406	.338
Density	.136	-.174	.262	.632	.517
Percent Owner Occupied	.246	.198	.134	-.781	.727
Percent Retail Trade (eating, drinking)	.098	-.208	.059	.606	.424

the two change periods in the manner mentioned above. This technique, while analogous to the Ahmavaara Matrix Transformation Analysis[6] is unique to this study and requires a detailed explanation.

The procedure has its rationale in the fact that, with orthogonal factor vectors (employed in this analysis), the loading of a variable on a factor is the correlation of a variable with that factor. The factor, it must be remembered, is the composite of all variables in the analysis, each one contributing to the makeup of the factor relative to the magnitude of its loading.[7] A factor score is the measure obtained by actually "computing" the factor as a dependent variable in a regression equation containing the variables as independent variables with regression coeffi-ceints equivalent to their loadings. It follows, therefore, that the factor loading is equivalent to the correlation between each variable and the factor score obtained by such a computation. Also one can obtain the loadings of variables at time 2 with factors at time 1 and by computing the difference between the loading obtained thusly and the loading of the variable at time 1, one can obtain the exact amount by which the variable has shifted from time 1 to time 2 in terms of the factor vectors at time 1. The loadings in Table 4-5 represent the correlations of 1960 values for the variables with 1950 factors. Table 4-6 represents the shifts in loadings between 1950 and 1960 variables on the 1950 factors, or the shifting patterns of dimensionality between the two census periods. The D^2 column in Table 4-6 shows the degree to which each variable has shifted. The largest shift is percent white collar (D^2 = .434).[8] Its movement is away from the employment dimension toward an income dimension (-.348 to +.489). White collar employment became more related to what was defined

Table 4-6.- Shifting Patterns of Dimensionality (1950-1960): Changes in Factor Loadings in Terms of 1950 Four Factor Solution (22 variables) for Component Variable Set

Variable	Income	Age	Employment	Density	D^2
Land Area	.044	.075	.118	-.101	.032
Median Family Income	-.022	-.006	-.048	.057	.006
Percent Below Low Income	.003	.028	-.089	.057	.013
Percent Above High Income	-.052	-.042	-.041	-.038	.006
Median School Year	-.090	.038	-.004	.078	.015
Percent Under Grade School	-.058	-.020	.002	.059	.007
Percent Over High School	-.121	.101	.073	.310	.126
Median Value	-.027	.041	.050	-.035	.061
Percent Under 5 Years of Age	.114	-.260	.018	.024	.081
Percent Over 65 Years of Age	-.019	-.082	-.061	.125	.026
Median Age	-.075	-.100	.080	.090	.030
Births/1000	-.074	.038	-.050	-.097	.018
Deaths/1000	-.090	-.004	.167	.237	.092
Percent Units Under 10 Years Old	-.022	-.305	-.065	.103	.097
Percent Retail Trade (food)	-.161	.130	-.048	-.139	.064
Percent Employed at Construction	.166	-.346	-.058	.074	.156
Percent Employed at Manufacturing	.195	.011	-.185	-.024	.072
Percent Employed as White Collar	.489	-.233	-.348	-.143	.434
Median Rooms Per Unit	-.183	-.200	-.234	.155	.152
Density	.124	-.044	.016	.003	.017
Percent Owner Occupied	-.082	.098	.036	.036	.018
Percent Retail Trade (eating, drinking)	.047	.053	-.067	.003	.009

For each variable the value displayed under each factor =
(absolute value of correlation of variable with 1960 factor score) -
(absolute value of correlation of variable with 1950 factor score)

as a 1950 income dimension. Another major shift during this time period concerns the existence of "percent over high school," which moved from an income dimension closer to a "Density" loading. Education has become more associated with home ownership and less with income. Subtle shifts in the income dimension become apparent when one scrutinizes the 1960 analysis in Table 4-3. Education measures show a higher loading on the factor labeled "Income" than in 1950, but the 1960 factor[9] is a little different; in fact it is an income-white collar dimension. Table 4-6, in sum, shows a general movement of education measures to the suburban pole of the density factor as well as a redefinition of the cities' employment.

With these changes in mind one can view the shifts from 1960 to 1970 in the same manner. Table 4-7 shows the correlations of the 1970 variables with the 1960 vectors. Table 4-8 again measures variable shifts in terms of the 1960 factors. Again the variable showing the greatest overall shift is percent white collar; however, the shift is away from the four 1960 dimensions. (Note the decrease in H^2 from Table 4-3 to Table 4-7 of .814 to .409.)[10] The 1960 analysis does not explain 1970 white collar employment. The 1970 factor analysis shows a communality of .64 (Table 4-4) for this variable, along with a high loading on the 1970 density factor. By 1970 white collar employment has become associated with suburban housing and, to some degree, with youth.

One must conclude that these four dimensions have retained relative stability over the twenty years, at least enough to justify their like labeling. Hopefully their meanings have been made clear enough to afford an understanding of their parameters when they are used as independent

Table 4-7.-- Shifting Patterns of Dimensionality (1960-1970): 1970 Variables in Terms of 1960 Dimensions for Component Variable Set

1970	Income (60)	Age (60)	Employment (60)	Density (60)	H^2
Land Area	-.036	.196	-.240	-.160	.305
Median Family Income	.781	-.050	.468	.077	.838
Percent Below Low Income	-.678	.032	-.587	-.151	.829
Percent Above High Income	.845	-.056	.234	-.079	.650
Median School Year	.749	.146	-.237	.257	.704
Percent Under Grade School	-.621	.172	-.131	-.387	.582
Percent Over High School	.840	.122	-.268	.189	.828
Median Value	.706	-.162	.159	-.413	.720
Percent Under 5 Years of Age	-.342	.594	.167	.116	.511
Percent Over 65 Years of Age	.030	-.822	-.137	-.101	.705
Median Age	.158	-.762	.023	-.160	.632
Births/1000	-.387	.485	-.124	-.034	.401
Deaths/1000	-.331	-.781	-.087	-.050	.730
Percent Units Under 10 Years Old	.290	.502	-.473	-.075	.565
Percent Retail Trade (food)	-.015	-.045	.522	-.076	.281
Percent Employed At Construction	-.129	.317	-.591	.110	.479
Percent Employed At Manufacturing	-.287	-.101	.808	.100	.755
Percent Employed As White Collar	.032	.569	-.023	.291	.409
Median Rooms Per Unit	-.038	.071	.139	.679	.487
Density	.008	-.410	.351	-.515	.557
Percent Owner Occupied	.062	.396	.025	.726	.688
Percent Retail Trade (eating, drinking)	.058	-.320	.109	-.487	.355

Table 4-8.-- Shifting Patterns of Dimensionality (1960-1970): Changes in Factor Loadings In Terms of 1960 Four Factor Solution (22 variables) for Component Variable Set

Variable	Income	Age	Employment	Density	D^2
Land Area	-.011	-.006	.005	.062	.004
Median Family Income	-.041	-.014	-.036	.023	.003
Percent Below Low Income	.034	-.025	-.054	.022	.004
Percent Above High Income	-.036	-.027	.003	-.012	.001
Median School Year	-.098	-.001	-.008	.041	.011
Percent Under Grade School	-.051	-.002	-.040	.045	.005
Percent Over High School	-.042	-.006	-.020	.025	.003
Median Value	-.040	-.021	-.047	-.010	.004
Percent Under 5 Years of Age	.083	-.263	.145	-.038	.098
Percent Over 65 Years of Age	.001	-.087	.125	-.011	.016
Median Age	-.014	-.141	-.055	.035	.024
Births/1000	.087	-.272	.013	.024	.082
Deaths/1000	-.017	-.067	.054	.032	.013
Percent Units Under 10 Years Old	-.144	-.133	.151	.016	.099
Percent Retail Trade (food)	-.013	-.046	-.128	.032	.019
Percent Employed At Construction	.065	-.138	-.047	.055	.028
Percent Employed At Manufacturing	-.258	-.078	-.041	.009	.074
Percent Employed As White Collar	-.802	.505	-.309	.254	1.058
Median Rooms Per Unit	-.006	-.073	-.077	-.058	.015
Density	-.076	.009	.009	.018	.006
Percent Owner Occupied	-.199	.054	-.134	-.007	.064
Percent Retail Trade (eating, drinking)	.013	-.037	-.092	-.090	.028

For each variable the value displayed under each factor =
(absolute value of correlation of variable with 1970 factor score) -
(absolute value of correlation of variable with 1960 factor score)

predictors in Chapter VI. They will provide (along with population, employee/population ratio, and percent nonwhite) the social, economic, and demographic variables with which to account for expenditures in 1950, 1960, and 1970. However, a major portion of this study is concerned with accounting for change during these years. Although it is easy to compute changes in the three separate measures, such computation becomes clouded for dimensions reflecting slightly different phenomena. The best possible research posture open to the analyst desiring concise measures of socioeconomic change is a factor analysis of all changes in the independent variable set.

Factor Analysis of Change

The problem of arriving at dimensions of change can be approached in a straightforward manner. All variables were subject to two computations: (A) the 1950 value was subtracted from the 1960 value for each measure, and (B) the 1960 value was subtracted from the 1970 value. All values obtained in (A) were factor analyzed, as were those in (B). Although the decision specifying the number of factors was not as clearcut as that underlying the choices for the 1950, 1960, and 1970 number of factors, the analysis was again limited to four factors for each change period[11] (see Table 4-9). The amount of variance explained by these four is barely over 50 percent; therefore a substantial amount of variation is not captured in the four factors.

Unlike the analyses at the discrete time periods the change solutions do not yield dimensions susceptible to similar naming. The 1950-1960 solution yields four fairly discernable factors. The first, labeled "Age" ranges from cities with older populations to those with younger populations

Table 4-9.--Principal Components for Factor Analysis of Changes (1950-1960-1970) in Twenty-Two Independent Variables (minus population change, change in percent of non-white, change in employee/population ratio): Criteria for Choice of Solution (1-8 factors)

	Lambda		Percent of Explained Variance		Cumulative Percent	
	1950-60	1960-70	1950-60	1960-70	1950-60	1960-70
1	4.72510	4.01605	21.48	18.26	21.48	18.26
2	2.70991	3.33629	12.33	15.17	33.80	33.42
3	2.03600	2.67404	9.25	12.16	43.05	45.58
4	1.74818	2.00363	7.95	9.11	51.00	54.68
5	1.41681	1.22529	6.44	5.57	57.44	60.25
6	1.17814	1.08030	5.36	4.91	62.79	65.16
7	1.03524	1.01722	4.71	4.61	67.50	69.79
8	0.87916	.85962	4.00	3.91	71.50	73.70

living in newer structures. The second factor is labeled "Income-Employment" ranging from cities with a high proportion employed in construction to cities with high family incomes and higher proportions employed in white collar and manufacturing. The third, "Education-Income," ranges from cities with a higher proportion of poor and less educated to cities with a larger proportion of higher income and well educated citizens. The last factor, "Density," is a composite ranging from cities with a larger number of rooms per unit to those with both a high birth and death rate. Table 4-10 tells us that cities tended to age, become richer, manufacturing, white collar cities, to become more educated with a higher proportion of wealthy citizens, and become denser with a higher birth and death rate. Each of these phenomena can be captured by a factor score summarizing the dimension.

Table 4-11 shows a like analysis of socio-economic change between 1960 and 1970. The four dimensions demonstrate the different patterns of change present in this period. The first factor is a straightforward income factor. Cities tend to become wealthier and better housed. "Education-Density" is a complex factor, which tells us, in essence, that cities become more dense and less educated at the same time. "Age" is a dimension ranging from cities with a greater proportion of older people to those with smaller proportions. Note that the births/1,000 and deaths/1,000 changes are now independent. The last factor is "Youth-Employment." Cities with higher scores on this dimension have less birth/1,000 and less young people as well as fewer newer units and less employment in construction and manufacturing.

One reason for the factor solutions is to guard against multicollinearity in the independent variable set. The relationships among all

Table 4-10.--Varimax Factor Analysis of Change: Dimensions of Change from 1950 to 1960 (22 variables minus population change, change in percent non-white, change in employee/population ratio).

Change 1950-1960	1950-1960 Four Factor Solution				
	Age	Income Employment	Education Income	Density	H^2
Land Area	0.30298	0.01265	0.08969	-0.44511	.29813
Density	0.06837	0.25956	0.32826	.39238	.33376
Percent Under 5 years of age	0.85543	-0.19895	0.02428	0.08953	.77995
Percent Over 65 years of age	-0.71211	-0.26415	-0.26392	0.22519	.69724
Median Age	-0.79426	-0.13803	-0.1.585	0.27605	.73731
Births/1000	0.06275	0.03806	0.05429	0.63506	.41164
Deaths/1000	-0.65320	-0.23202	-0.16008	0.50579	.76196
Median Family Income	0.16488	0.78124	0.01997	0.26921	.71040
Percent Below Low Income	-0.19103	-0.32142	-0.72434	0.00899	.66459
Percent Above High Income	0.02098	0.23022	0.75901	0.01124	.62067
Median School Year	0.13025	-0.28257	0.51668	-0.06721	.36828
Percent Under Grade School	-0.08072	0.26465	-0.74937	0.07533	.64379
Percent Over High School	0.09799	-0.13108	0.64009	-0.23030	.48954
Percent Employed at Construction	0.39665	-0.39983	-0.02709	0.19436	.35570
Percent Employed at Manufacturing	0.12433	0.52295	-0.11969	-0.48846	.54185
Percent Employed as White Collar	0.01281	0.65800	-0.13736	-0.12986	.46885
Median Rooms/Unit	-0.04766	-0.09244	0.35477	-0.63458	.53938
Percent Units Under 10 years old	0.71798	0.04876	0.16471	0.09283	.55362
Percent Owner Occupied	0.26128	-0.21827	0.40988	-0.15474	.30806
Median Value Owner Occupied Unit	0.03837	0.64784	0.11695	0.30396	.52717
Percent Retail Trade (food)	0.22894	-0.17832	0.26050	-0.38204	.29802
Percent Retail Trade (eating, drinking)	-0.01628	0.24586	-0.17204	-0.09900	.10001
Percent of Total Variance	15.03	11.87	13.44	10.66	51.00

Table 4-11-- Varimax Factor Analysis of Change Dimensions of Change from 1960 to 1970: (22 variables minus change in population, change in percent non-white, change in employee/population ratio)

Change 1960-1970	1960-1970 Four Factor Solution				
	Income	Education Density	Age	Youth Employment	H^2
Land Area	0.25475	-0.52739	0.23643	0.017039	.40403
Density	0.05754	0.58931	-0.27298	0.03946	.42668
Percent Under 5 years of age	0.00313	0.45469	0.33569	-0.60650	.68729
Percent Over 65 years of age	-0.07424	0.12027	-0.87524	-0.13241	.80358
Median Age	0.10036	-0.11630	-0.87734	0.09749	.80098
Birth/1000	-0.07937	0.48218	-0.04531	-0.59739	.59778
Deaths/1000	-0.25024	0.14504	-0.78596	-0.04682	.70358
Median Family Income	0.91928	0.13245	0.12544	0.09106	.88664
Percent Below Low Income	-0.88767	0.12818	0.00377	-0.00537	.80444
Percent Above High Income	0.81222	-0.14755	0.02117	-0.06238	.68578
Median School Year	0.05712	-0.55654	0.16793	-0.45887	.55176
Percent Under Grade School	-0.06350	0.62668	0.14914	0.38095	.56413
Percent Over High School	0.40417	-0.36612	0.44380	-0.05484	.49737
Percent Employed at Construction	0.04672	0.00735	0.00334	-0.56689	.32363
Percent Employed at Manufacturing	-0.21092	-0.20114	-0.06276	-0.46264	.30292
Percent Employed as White Collar	-0.28758	-0.51703	-0.01132	-0.08091	.35670
Median Rooms/Unit	0.02262	-0.48310	-0.00668	0.25492	.29893
Percent Units Under 10 years old	0.18291	-0.16923	0.47029	-0.59791	.64077
Percent Owner Occupied	-0.05424	-0.83132	-0.10651	-0.07009	.71029
Median Value Owner Occupied Unit	0.70078	0.37373	0.06962	-0.02301	.63614
Percent Retail Trade (food)	0.03984	-0.06494	-0.30791	0.30685	.19477
Percent Retail Trade (eating, drinking)	-0.02878	0.12683	0.16599	0.32722	-.15154
Percent of Total Variance	14.58	16.02	13.66	12.42	54.68

seven predictors is therefore important. Table 4-12 summarizes the relationships between the other three variables and the four factors at each time period. Population is generally related to density. Employee/population ratio, although supposedly a measure of exploitation, seems more a measure of the unemployment in a city. The presence of blacks seems related to poverty. Although the correlations are often substantial, the problems of multicollinearity has been, for the most part, avoided. (The correlations between the three distinct variables at each time period are consistently low.[12]) Thus the purpose of this chapter has been accomplished: the description of socio-economic change and the creation of a summary group of variables acceptable as predictors in later analysis. While meaures obtained for discrete time periods will be used to predict spending at these times, change scores will be related to changes in spending. Chapter V will provide a detailed analysis of major dependent variables over time, testing the hypotheses concerning regional and temporal trends in urban expenditures.

Conclusion

The American urban phenomena has always reflected the social and economic dimensions of the changing nation. Today the American city stands as the structural manifestation of social forces which have become gradually inoperative. One's point of view, however, determines whether one conceives of urban America as virtually static or undergoing fundamental change.

When the American city is observed in the aggregate at ten year intervals from 1950 to 1970 a relative consistency becomes apparent. Four distinct urban phenomena have continued to occur: wealth, age, nature of

Table 4-12.--Correlations Between Population, Employee/Population Ratio, and Percent Non-White With the Four Socio-economic Factors from Each Time Period.

Year	Factor Score	Correlation (Pearson's r) With Population	Employee/Population	Percent Non-White
1950	Income	.0051	.2296	-.5236
	Age	-.0098	-.2531	.2243
	Employment	-.0392	.2703	-.3278
	Density	.4304	.1883	.1594
1960	Income	.0017	.3528	-.4209
	Age	-.0108	-.4679	-.0295
	Employment	.0204	.2057	.0182
	Density	.4016	-.1619	.2007
1970	Income	.0074	.5175	-.4457
	Age	.0754	.1874	.1590
	Employment	-.0277	.2174	-.0811
	Density	.3043	.2116	.2776
1950-1960	Age	.4482	-.3449	-.0329
	Income/Employment	.2665	.5476	-.1381
	Income/Education	.1235	.0136	-.4759
	Density	-.4883	.1677	.1388
1960-1970	Income	.3814	.3792	-.4578
	Education/Density	-.3191	-.0201	.3906
	Age	.2316	-.1543	.0612
	Youth Employment	.1712	.2035	-.1282

employment, and housing density. Their independence underlies the complexity of American urbanism. Wealthy cities are not necessarily new (young) or old. Nor are they necessarily suburban. Rather the mix of these traits determines the multitude of city types. While the wealth of cities appears at any one observation to be an independent tendency, the increasing well being of cities has become tied to totally different social and economic developments during the past twenty years.

The year 1960 seems to be a crucial demarcation in the process of American urbanism. The increasing wealth of the city, once a characteristic related to its growing manufacturing sector, has become associated with increasing "suburbanism," or increased home ownership and less density. The transformation is a dynamic one, and the changes are slowly altering the total urban picture. One fact has become apparent. Urbanism, when viewed as a process, is a changing, dynamic development which has undergone a basic change of direction, the end result of which has crucial implication for American public policy makers in future periods.

NOTES

[1]The rationale here is that while these variables may well co-vary with others in factor analysis, their meanings are so unique as to warrant their later use in their original form. Employee/population has been used as an "exploitation" surrogate, the idea being that the more workers living outside of a city, the more the city is exploited by suburbs.

[2]Multicollinearity is the presence of a number of predictor measures so interrelated as to make the sorting out of the unique contribution of each variable impossible. Generally a correlation above .7 between two predictors causes problems. While regression algorithms "partial" shared variances, relatively uncorrelated independent variables are sought in this chapter.

[3]See Harry H. Harmon, Modern Factor Analysis (Chicago: University of Chicago Press, 1967), pp. 82-83.

[4]R. J. Rummel, Applied Factor Analysis (Evanston: Northwestern University Press, 1970), p. 361.

[5]The factor scoring program is F score, OSIRIS III. See Rummel, Applied Factor Analysis, pp. 437-445.

[6]This technique was developed by Ahmavaara and others for the comparative dimensionality of different groups of people on similar items. See Yuri Ahmavaara, "The Mathematical Theory of Factorial Invariance," Psychometrica, XIX (1954), 27-38. It involves a series of matrix comparisons involving least squares fits of one matrix to another. The 285 cities of this analysis are compared to themselves, in effect. This allows the procedure described to be implemented without approximation.

[7]Harmon, Modern Factor Analysis, pp. 15-21. We are speaking, technically, of what Harmon calls "principal component analysis." That is, unities are placed in the diagonals of the matrix.

[8]This measure sums the squares of the difference between sets. The signs of loadings are, in this instance, ignored; only strength of relationship is of interest.

[9]The signs for "Density" in 1960 are reversed. In the future a high score on this factor is the same for all three census periods.

[10]A decrease in the H^2 (communality) tells us that the four dimensions "explain" less of this variable.

[11]Again the scree test was applied. The choice of four factors was more clearcut for 1960-1970. The 1950-1960 analysis left no obvious point at which to cease factoring.

[12]Intercorrelations between population, employee/population, and percent nonwhite are as follows. For each period the first value is between population and employee/population, the second between population and percent nonwhite, and the third between employee/population and percent nonwhite. 1950 (.07, .06, -.04); 1960 (.32, -.04, .03); 1970 (.26, -.34, -.17); 1950-1960 (-.05, -.03, .02); 1960-1970 (.01, -.41, -.32).

CHAPTER V

REGIONAL AND NATIONAL TRENDS IN URBAN EXPENDITURES

Chapter IV outlined the changing socio-economic conditions of American cities. However, before a detailed causal analysis can be undertaken it is necessary to fully describe regional differences in dependent variables throughout the time period. This is desirable for two reasons. First, the literature described in Chapter I highlighted the controversy underlying the relationship between regionalism and reform.[1] While the position here is that region cannot be "controlled" for meaningfully, it may still be a powerful "predictor" of public policy. The analyst must at least describe the regional parameters within which he must operate. Second, it has been hypothesized in Chapter III that expenditure patterns will become more alike over time, both within regions and nationally. With the former in mind this chapter will deal extensively with the latter reason.

Region as an Explanatory Variable

Region can be thought of as a predictor in and of itself. The simplest way to gauge the degree to which region underlies a series of dependent variables is to see what proportion of total variance can be accounted for by region. When cities are "grouped" by region, how much of the total variation can be attributed to the difference between the group means and the national mean? The appropriate statistic for this analysis is eta^2 (the amount of total variance accounted for by the control

variable in analysis of variance).[2] The larger the eta^2 value the more a phenomenon is "regional." Prior to this computation, however, one must partition the universe of cities by city-run or non-city-run schools. As mentioned in Chapter III, this structural characteristic is of such explanatory-predictive power that it must be controlled for in some fashion if valid inferences are to be made.[3] Here tabular controls will be employed. Since the Census Bureau's four-region breakdown is to be utilized, this means an eight-fold partition of expenditure variables. The number of cities reaches as low as four in one case (West city-run schools). Obviously limited inferences can be made from this category.

Table 5-1 shows the amount of total variation attributable to region for city-run and non-city-run school systems in 1950, 1960, and 1970. The picture is indeed complex. The major dependent variable (per capita expenditures) shows a rather marked tendency to become less regional. Another, per capita expenditure minus education,[4] is similar in behavior. The variables measuring within city distributions of expenditures can be grouped into two general categories; those involving highways and sanitation functions are becoming more regional while those involving welfare and public safety are becoming less regional in their patterns. The latter category's behavior can be traced to increased federal vis-a-vis state aid influencing these functions. Otherwise Table 5-1 certainly provides no evidence that expenditure patterns are becoming less regional. Certain important summary financial measures such as expenditure, expenditure minus education, and revenue demonstrate, by 1970, a relatively decreased regionalism. Also non-city-run school cities are generally less affected by region, probably because their budgets are less constrained by such a large portion earmarked for education.

Table 5-1.--Percent of Explained Variance by Four Census Regions for 1950, 1960, and 1970 Expenditure Items. (Eta^2)

Variable	City-Run-Schools			Non-City-Run Schools		
	1950	1960	1970	1950	1960	1970
Per Capita Highway Expenditure	--	14.1	11.9	--	3.2	12.8
Per Capita Health and Hospital Expenditure	2.6	1.1	--	2.5	3.2	--
Per Capita Sanitation Expenditure	--	14.3	5.4	--	3.9	2.8
Per Capita Public Safety Expenditure	26.3	9.9	13.4	17.4	5.6	21.9
Per Capita Public Welfare Expenditure	19.0	13.3	3.3	6.4	3.0	3.2
Per Capita School Expenditure	38.4	11.1	11.4	--	--	--
Percent Expenditure on Highways	--	20.9	28.0	--	4.3	6.1
Percent Expenditure Health and Hospitals	1.5	1.0	--	4.8	5.5	--
Percent Expenditure Sanitation	--	19.0	22.5	--	6.1	9.7
Percent Expenditure Public Safety	17.6	7.5	4.8	3.4	5.7	3.2
Percent Expenditure Public Welfare	18.1	12.8	5.2	5.0	2.2	3.3
Percent Expenditure Schools	24.6	10.6	16.1	--	--	--
Per Capita City Payroll	22.6	11.5	10.6	15.3	11.2	9.2
Per Capita City Employees	3.8	11.6	10.7	9.4	0.7	5.6
Per Capita Expenditure (total)	31.8	9.9	6.5	10.7	5.5	7.5
Per Capita Expenditure (-ed.)	20.6	6.7	1.5	10.7	6.7	8.2
Per Capita Taxes	39.2	52.5	7.8	3.7	1.7	6.9
Per Capita Intergovernment Revenue	5.1	4.1	2.6	28.6	13.7	19.5
Percent Intergovernment Revenue	1.7	5.6	2.5	26.3	16.1	28.2
Per Capita Revenue	30.9	14.4	7.9	12.6	5.1	6.4
	n = 110			n = 175		

Major dependent variables are subject to a detailed within region analysis in Table 5-2. All regions show an increase in the utilization of intergovernmental aid, with minor deviation from national averages. The major increases have occurred between 1960 and 1970. The South has shown a marked increase in per capita intergovernmental aid,[5] especially in cities with dependent school systems. In all summary items major increases have occurred between 1960 and 1970. The city-run school cities tend to spend more on all items (note the consistently higher figures for city-run systems in per capita spending minus education). Northern cities show a higher predisposition to tax and spend when they run their own schools, but not when they have independent systems. Table 5-3 demonstrates the degree to which cities are becoming more "alike" over time, both regionally and nationally. The variance for cities on the major variables (per capita revenue and expenditure) is certainly not reduced. In fact, the magnitude of the coefficient of variation (V)[6] indicates that they are varying more. The statistic V, a measure unaffected by differing units of measure or the size of the mean, is the ratio of the standard deviation to the mean. The only region becoming more homogeneous is the South, and only in non-city-run systems. Overall, on summary financial indicators, there is no movement toward either regional or national homogeneity.

The above conclusion is applicable to functional categories as well. Table 5-4 shows regional means for city and non-city-run school systems for functional items. City responsibility for welfare and health and hospitals is so meager that validity of the available figures is questionable.[7] One is immediately struck, however, by the burden of school

Table 5-2.--Selected Summary Financial Indicators: Trends Over Time for City-Run and Non-City-Run Schools by Region

Year	Expenditure-Revenue Measure	City-Run Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1950	Percent Total	.20	.21	.24	.21	.20	.07	.07	.15	.19	.13
1960	Revenue	.18	.24	.26	.13	.21	.16	.08	.15	.16	.13
1970	Intergovernment	.27	.27	.29	.20	.27	.21	.09	.20	.22	.17
1950	Per Capita	21.78	16.32	21.87	11.93	19.93	2.20	2.63	6.16	10.65	9.52
1960	Intergovernment	33.75	37.67	42.31	14.97	35.18	10.26	5.74	11.30	14.61	10.31
1970	Revenue	96.38	98.91	82.84	40.18	93.48	28.60	11.57	29.36	40.72	26.58
1950	Per Capita	71.87	41.30	47.41	28.17	58.78	24.70	26.16	23.43	29.51	25.62
1960	Taxes	110.39	45.02	71.82	32.79	84.59	31.90	28.05	33.11	29.35	30.72
1970		--	--	--	--	--	--	--	--	--	--
1950	Per Capita	97.55	63.94	78.22	55.79	84.28	29.72	36.70	36.41	49.99	38.85
1960	Revenue	167.19	123.00	142.26	103.12	149.52	60.88	71.07	71.17	83.90	73.08
1970		332.44	262.17	255.05	213.90	299.18	125.90	122.83	144.74	167.20	141.73
1950	Per Capita	106.01	70.86	86.27	55.07	91.92	31.89	44.10	39.80	55.96	43.86
1960	Expenditure	169.88	133.57	154.20	111.25	155.67	63.70	79.21	73.23	88.99	77.63
1970		352.80	293.20	274.17	208.17	321.47	132.14	124.70	146.30	172.66	144.59
1950	Per Capita	76.98	54.65	59.47	54.99	67.81	31.89	44.10	39.80	55.96	43.86
1960	Expenditure	115.25	91.65	101.75	111.24	106.86	59.60	77.89	73.22	88.81	76.88
1970		224.19	265.55	186.67	208.71	213.94	124.54	124.40	146.23	172.01	143.73
	n	62	31	13	4	110	14	51	72	38	175

Table 5-3.--Trends in National and Regional Variance for City-Run and Non-City-Run-School Systems: Coefficient of Variation* by Region for Summary Measures Over Time

Year	Expenditure-Revenue Measure	City-Run Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1950	Percent of	.58	.49	.38	.21	.52	.31	1.18	.54	.46	.70
1960	Total Revenue	.55	.56	.36	.17	.55	.66	1.20	.51	.37	.66
1970	Intergovernment	.35	.53	.25	.25	.40	.51	.96	.46	.31	.59
1950	Per Capita	.65	.61	.51	.27	.64	.32	1.17	.65	.75	.95
1960	Intergovernment	.66	.75	.57	.45	.47	.92	1.30	.68	.65	.84
1970	Revenue	.62	.97	.50	.37	.75	.62	1.03	.63	.86	.91
1950	Per Capita	.28	.50	.31	.23	.42	.31	.66	.31	.40	.47
1960	Taxes	.29	.52	.49	.33	.50	.63	.62	.48	.60	.52
1970		.35	.69	.41	.24	.46	.36	.31	.39	.58	.45
1950	Per Capita	.25	.39	.28	.17	.34	.26	.61	.34	.37	.44
1960	Revenue	.28	.55	.31	.23	.38	.35	.42	.34	.37	.38
1970		.35	.69	.41	.24	.46	.36	.32	.39	.58	.46
1950	Per Capita	.23	.41	.28	.16	.33	.28	.57	.37	.46	.49
1960	Expenditure	.28	.51	.39	.37	.37	.39	.40	.38	.38	.39
1970		.35	.69	.43	.25	.47	.40	.31	.40	.50	.44
1950	Per Capita	.29	.42	.21	.16	.35	.28	.57	.37	.46	.49
1960	Expenditure	.34	.48	.25	.37	.38	.27	.41	.38	.37	.39
1970		.47	.62	.27	.25	.49	.28	.31	.40	.55	.43
	n	62	31	13	4	110	14	51	72	38	175

* $V = \frac{sd}{\bar{x}}$

Table 5-4.-- Per Capita Functional Expenditures: Trends Over Time for City-Run and Non-City-Run Schools (Mean Expenditure by Region (4).

Year	Per Capita Expenditure	City-Run-Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1950		--	--	--	--	--	--	--	--	--	--
1960	Highways	12.02	14.12	21.96	13.45	13.58	9.24	11.82	13.69	13.86	12.83
1970		18.41	22.43	30.44	27.13	21.28	13.19	14.37	19.53	21.83	13.02
1950	Health	4.65	3.82	2.78	1.49	4.07	.82	2.71	2.81	1.63	2.37
1960	and	9.15	7.25	7.04	4.40	8.19	.88	6.75	4.90	2.84	4.67
1970	Hospitals	--	--	--	--	--	--	--	--	--	--
1950		--	--	--	--	--	--	--	--	--	--
1960	Sanitation	11.17	13.58	18.38	7.70	12.58	8.15	13.80	12.63	10.51	12.15
1970		21.46	23.47	27.96	11.44	22.42	13.49	19.16	20.85	17.16	19.14
1950	Public	14.70	10.08	11.87	12.78	13.00	8.84	9.18	9.50	12.65	10.03
1960	Safety	26.53	18.34	21.57	26.06	23.62	15.94	17.53	17.75	23.81	18.86
1970		51.62	39.92	41.26	48.34	46.98	32.34	31.11	24.31	44.76	35.49
1950	Public	13.00	2.96	1.18	.14	8.61	.64	.34	1.32	3.68	1.32
1960	Welfare	15.16	5.24	2.10	.14	10.27	.38	.20	.45	2.35	.78
1970		12.30	18.20	2.16	.21	12.33	.68	.16	.17	6.05	1.48
1950		29.03	16.21	26.80	--	24.10	--	--	--	--	--
1960	Schools	54.63	41.92	52.44	--	48.80	--	--	--	--	--
1970		128.61	87.64	87.50	--	107.52	--	--	--	--	--
1950	Total	106.01	70.86	86.27	55.05	91.92	31.89	44.10	39.80	55.96	43.86
1960	Expenditure	169.88	133.57	154.20	111.25	155.67	63.79	79.21	73.23	88.91	77.63
1970		352.80	293.20	274.17	208.71	321.47	132.14	124.70	146.30	172.66	144.59
	n	62	31	13	4	110	14	51	72	38	175

* $V = \frac{ed}{\bar{x}}$

finance undertaken by cities in the Northeast. Also notable are higher highway and sanitation spending in the Midwest, and higher public safety figures in the North and West.[8] Also notable is the continuing tendency of city-run school cities to spend more on all functions. Possibly the increased responsibility and centrality of the city governments in these municipalities enables them to more effectively marshall resources. Coefficients of variation for functional items are shown in Table 5-5. Cities are becoming somewhat more alike, both nationally and within regions, in highway expenditures. Otherwise, the variations have actually increased. There does seem to be a peaking of variation at all levels in 1960 in public safety spending, with cities becoming more alike by 1970. Perhaps the rapid urbanization from 1950-1960 caused widely differing expenditure reactions which began leveling off by 1970.

Table 5-6 depicts the percentage of a city's total budget allocated to a functional category. Obviously there is very little difference among regions except the Northeast's continuing heavy finance of schools. Other trends are more national in scope. Over time, cities are spending less on highways and sanitation and more on public safety, expecially Western cities. The decrease in welfare expenditures is essentially due to the increasing nationalization of that function.

The rapid increase in public payrolls and city government employees is shown in Figure 5-7. The pattern is for the Northeast to have a larger payroll (city-run schools) while the West has a larger payroll with fewer employees. The latter fact suggests a more professional government employee sector in the West. The South's higher number of employees and lower payroll, in contrast, is consistent with the region's employment of

Table 5-5.--Trends in National and Regional Variance* for City-Run and Non-City-Run School Systems: Coefficient of Variation by Region for Functional Expenditures, 1950, 1960 and 1970

Year	Per Capita Expenditure	City-Run-Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1950	Highways	---	---	---	---	---	---	---	---	---	---
1960		.59	.69	.29	.34	.60	.44	.58	.64	.57	.59
1970		.54	.63	.28	.27	.55	.52	.62	.44	.32	.49
1950	Health	1.19	1.30	.79	.25	1.23	.71	1.86	1.65	1.49	1.76
1960	and	1.22	1.74	1.43	1.53	1.38	.57	1.75	2.22	2.11	2.13
1970	Hospitals	--	--	--	--	--	--	--	--	--	--
1950	Sanitation	--	--	--	--	--	--	--	--	--	--
1960		.48	.50	.47	.32	.53	.48	.72	.68	.56	.68
1970		.64	.53	.32	.26	.57	.68	.52	.76	.57	.69
1950	Public	.28	.26	.18	.20	.31	.23	.34	.28	.30	.33
1960	Safety	.28	.51	.39	.37	.37	.40	.39	.38	.38	.39
1970		.26	.44	.19	.25	.32	.32	.26	.30	.23	.31
1950	Public	1.08	1.33	.85	1.20	1.40	2.21	1.08	1.47	2.81	3.41
1960	Welfare	1.22	1.60	1.08	1.73	1.52	3.61	2.06	3.96	4.22	6.14
1970		2.44	1.76	2.22	2.00	2.37	3.18	2.87	3.75	3.22	9.18
1950	Schools	.26	.60	.59	--	.47	--	--	--	--	--
1960		.53	.78	.83	--	.68	--	--	--	--	--
1970		.57	1.07	1.14	--	.80	--	--	--	--	--
1950	Total	.23	.41	.28	.16	.33	.28	.57	.37	.46	.49
1960	Expenditures	.28	.51	.39	.37	.37	.39	.40	.38	.38	.39
1970		.35	.69	.43	.25	.47	.40	.31	.40	.50	.44
	n	62	31	13	4	110	14	51	72	38	175

* $V = \frac{sd}{\bar{x}}$

Table 5-6.--Distribution of Functional Expenditures (Percent of Total Expenditures): Mean Percent by Region for City-Run and Non-City-Run School Systems, 1950, 1960 and 1970

Year	Percent of Total Expenditures	City-Run Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1950		--	--	--	--	--	--	--	--	--	--
1960	Highways	.07	.12	.16	.13	.09	.15	.16	.19	.16	.17
1970		.05	.10	.13	.13	.08	.10	.12	.14	.14	.13
1950	Health	.04	.05	.03	.03	.04	.02	.05	.06	.03	.05
1960	and	.05	.04	.04	.03	.05	.01	.08	.05	.03	.05
1970	Hospitals	--	--	--	--	--	--	--	--	--	--
1950		--	--	--	--	--	--	--	--	--	--
1960	Sanitation	.07	.12	.13	.08	.09	.13	.17	.17	.12	.15
1970		.06	.10	.11	.06	.08	.11	.16	.14	.10	.14
1950	Public	.14	.16	.15	.24	.15	.28	.23	.26	.24	.25
1960	Safety	.16	.16	.16	.25	.17	.27	.23	.26	.28	.26
1970		.16	.17	.17	.23	.17	.26	.26	.25	.28	.26
1950	Public	.11	.03	.02	.00	.07	.01	.00	.03	.04	.02
1960	Welfare	.08	.03	.02	.00	.05	.00	.00	.01	.01	.00
1970		.03	.04	.01	.00	.03	.00	.00	.00	.01	.00
1950		.28	.22	.28	--	.25	--	--	--	--	--
1960	Schools	.31	.26	.28	--	.28	--	--	--	--	--
1970		.35	.20	.23	--	.28	--	--	--	--	--
	n	62	31	13	4	110	14	51	72	38	175

Table 5-7.--Trends in Per Capita City Payroll and City Employees Over Time: Coefficient of Variation* and Means for City-Run and Non-City-Run School Systems by Region

Year	Public Sector Measure	City-Run Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1950	Per Capita	4.98	3.50	4.24	3.12	4.39	1.48	1.99	1.95	2.76	2.11
1960	City	8.31	6.13	7.05	5.53	7.45	2.84	3.67	3.31	4.59	3.66
1970	Payroll $\bar{X}$	19.17	14.29	14.37	10.27	16.90	6.26	6.83	6.93	9.12	7.32
1950	Per Capita	.1738	.1511	.1544	.1147	.1631	.0652	.0919	.0750	.0103	.0853
1960	Government	.1984	.1747	.1473	.1062	.1823	.0831	.1128	.0845	.0941	.0947
1970	Employees $\bar{X}$	.2589	.2311	.1795	.1142	.2364	.1037	.1250	.1010	.1073	.1097
1950	Per Capita	.23	.44	.36	.28	.34	.34	.46	.44	.38	.46
1960	City	.29	.63	.28	.20	.41	.41	.43	.41	.41	.44
1970	Payroll V	.35	.72	.53	.72	.49	.44	.32	.44	.44	.43
1950	Per Capita	.45	.45	.29	.26	.44	.40	.49	.49	.40	.49
1960	Government	.26	.50	.32	.30	.37	.39	.40	.39	.39	.41
1970	Employees V	.35	.58	.49	.27	.45	.35	.33	.42	.38	.39
	n	62	31	13	4	110	14	51	72	38	175

* $V = \frac{sd}{\bar{x}}$

blacks at very low wages. The coefficients of variation in Table 5-7 show increased national homogeneity for non-city-run school systems for both payroll and number of employees; however, the opposite is true in the city-run school systems. The national pattern is shown in the decreasing V's for the U. S. columns. This pattern has appeared concerning various other expenditure items and is indicative of the fact that educational budget responsibility is related to a tendency toward other budget responsibilities which widen the parameters of local finance in these cities. Two other patterns are worthy of some mention, the growing fiscal heterogeneity of Southern city-run systems and the growing homogeneity of Southern non-city-run systems. Table 5-7 shows this tendency, expecially for per capita payroll. The former can be logically traced to the diversity of approaches taken by Southern cities concerning support of public education. (As Table 5-5 indicates, however, this is a national phenomenon.) The fact that Southern non-city-run school cities have become more alike is possibly attributable to the area's strong regional traditions.[9]

The description to this point has been of revenue and expenditure items not related to the community's ability to pay. The possibility remains, however, that regional and national trends have taken hold relative to a community's spending effort. Changes in computation of dependent variables to assess this potential effect involve dividing each spending item by a measure approximating the total economic activity of the community. This measure consists of two segments: (a) per capita income, and (b) value added by manufacture, per capita. The latter is added because of the increased tax base afforded a local government by location of industry in that city. At this point in the analysis another form of the

dependent variable is introduced, "expenditure per capita minus aid."[10] This variable which omits both federal and state grants in aid more accurately gauges the actual effort of a city than does the per capita expenditure measure which includes funds from other sources. These measures are suffixed with ". . . GNP."[11]

Table 5-8 depicts the explanatory power of regionalism for this new variable set. Unlike Table 5-1, region is a better explainer when cities do not run their schools. Generally region has become less of a factor in GNP expenditure effort over time (see the "All Cities" column in Table 5-8). This conclusion must be tempered by the trends outlined in Table 5-9. Although region accounts for less diversity in 1970 than in 1960, cities are not becoming more alike nationally. Increased regionalism is manifest in increasing values for regional eta^2's. Increased regional and national homogeneity is indicated by lower V values. Decreased regionalism does not necessarily mean increased national homogeneity. Actually the same general tendencies are present in expenditure/ability to pay measures as in mean expenditure items. City-run school cities are becoming slightly more heterogeneous in this measure, both within regions and nationwide, while non-city-run school systems are generally becoming more homogeneous. The coefficients of variation show modest increases for the former, decreases for the latter. No important differences occur when expenditure items are computed as fractions of a city's ability to pay (Table 5-10)[12] and compared to the mean expenditure items discussed earlier in Table 5-4. One must conclude at this point that no case can be made for a growing similarity among cities relative to their spending habits. Even the massive infusion of intergovernmental aid has not lessened regional expenditure

Table 5-8.--Percent of Explained Variance by Four Census Regions* for 1960 and 1970 Revenue and Expenditure/GNP Estimate Items (eta^2)

Variable	City-Run Schools		Non-City-Run Schools		All Cities	
	1960	1970	1960	1970	1960	1970
Taxes/GNP	37.5	4.3	5.6	10.9	40.4	13.5
Intergovernmental Aid/GNP	10.4	3.1	5.5	17.9	7.9	7.4
Revenue/GNP	6.3	4.3	19.4	11.2	20.4	13.6
Expenditure/GNP	5.1	4.5	23.8	12.7	19.6	14.4
Expenditure-Aid/GNP	5.7	6.3	27.7	17.2	20.3	17.1
Expenditure Public Safety/GNP	6.1	5.1	27.4	25.5		12.5
Expenditure Schools/GNP	9.6	9.3	--	--	24.5	26.0
Expenditure Welfare/GNP	10.3	1.9	2.9	3.2	15.5	2.3
Expenditure Health and Hospitals/GNP	1.2	--	6.1	9.0	3.9	--
Expenditure Sanitation/GNP	21.9	10.4	12.2	10.1	11.8	7.1
Expenditure Government Payroll/GNP	5.1	5.9	23.4	20.5	18.5	17.0
Expenditure Highways/GNP	10.0	8.9	4.8	8.5	4.6	4.0

* City-Run-Schools (n=110)
Northeast (n=62) Midwest (n=31)
South (n=13) West (n=4)

Non-City-Run Schools (n=175)
Northeast (n=14) South (n=51)
Midwest (n=72) West (n=18)

$$V = \frac{sd}{\bar{x}}$$

Table 5-9.-- Trends in National and Regional Variance (1960 and 1970) in Summary Financial Measures/GNP Estimate: Coefficient of Variation* by Region

Year	Expenditure Revenue GNP	City-Run Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1960	Taxes/ GNP	.3629	.4374	.4681	.3340	.4970	.7236	.5277	.3654	.5485	.5312
1970		.6203	.6953	.4439	.2093	.6414	.4800	.3027	.3714	.5489	.4500
1960	Intergovernmental	.6973	.6579	.5774	.4707	.7122	1.0310	1.4150	.7156	.6349	.9783
1970	Aid/GNP	.4590	1.0001	.5420	.3182	.9710	.7531	1.0656	.6457	.7833	.8978
1960	Revenue/ GNP	.3758	.4693	.3250	.2333	.4114	.4477	.4234	.3317	.3690	.4365
1970		.6198	.6953	.4443	.2084	.6459	.4796	.3057	.3745	.5487	.4518
1960	Expenditure/ GNP	.3921	.4716	.3720	.3755	.4211	.4946	.4212	.3514	.3849	.4657
1970		.5818	.6943	.4785	.1964	.6211	.5236	.3124	.3773	.5019	.4439
1960	Expenditure	.4146	.4594	.3548	.3539	.4155	.5316	.4451	.3544	.3784	.5005
1970	minus Aid/GNP	.5096	.6006	.4793	.2325	.5467	.5708	.3066	.3917	.4482	.4482
	n	62	31	13	4	110	14	51	72	38	175

* $V = \frac{sd}{\bar{x}}$

Table 5-10.--Trends in National and Regional Variance (1960 and 1970) in Functional Expenditure/GNP Estimate: Coefficient of Variation* by Region

Year	Expenditure/ GNP Estimate	City-Run Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1960	Public Safety/	.3398	.3406	.2200	.2577	.3383	.3619	.3343	.2931	.3156	.3792
1970	GNP	.4682	.4160	.2267	.2317	.4466	.4440	.2767	.3182	.3090	.3609
1960	Health and	1.2293	1.6096	1.2540	1.5748	1.3665	.6296	1.9180	2.2000	1.1173	2.3653
1970	Hospitals/GNP	--	--	--	--	--	--	--	--	--	--
1960	Sanitation/ GNP	.4392	.4259	.5019	.3018	.5116	.5219	.8140	.6376	.6564	.7634
1970		.5222	.4497.	.3016	.3891	.4944	.7073	.4671	,5686	.8239	.6330
1960	Schools/ GNP	.5288	.7288	.8225	--	.6658	--	--	--	--	--
1970		.6218	1.0703	1.1683	--	.8361	--	--	--	--	--
1960	Public Welfare/	1.3151	1.4215	1.0655	1.6670	1.5516	3.615	2.2500	4.0714	4.1842	6.0384
1970	GNP	3.5000	1.7663	2.0789	2.3333	3.0404	3.2857	2.8000	4.3303	4.6260	8.5000
1960	Highway Expen./	.7589	.6425	.2908	.2545	.6651	.5395	.5844	.8086	.4913	.6147
1970	GNP	.6288	.6984	.3877	.1437	.6388	.6187	.6099	.5395	.3903	.5452
1960	Total Expend./	.3921	.4716	.3720	.3755	.4211	.4946	.4212	.3514	.3814	.4657
1970	GNP	.5818	.6943	.4785	.1964	.6211	.5236	.3124	.3773	.5019	.4039
	n	62	31	13	4	110	14	51	72	30	178

* $V = \frac{sd}{\bar{x}}$

patterns significantly, except for the lessened homogeneity at all levels. Regions do show substantial differences (Table 5-11) when the major dependent variables/GNP measures are compared. Notably cities in the Northeast have demonstrated that they are willing to commit a larger proportion of their incomes (with or without aid considered) to their public sector even when control of schools is taken into account. Cities in the South are also surprisingly public sector oriented. These differences must be kept in mind; whether they are products of the historical-demographic basis of each region or representative of regions as socio-economic groupings is beyond the scope of this analysis.

Conclusion

There is much continued variance in urban expenditure patterns to explain, and no increasing similarity to account for. Therefore Chapter VI will concentrate on utilizing the measures described in Chapter V to the expenditure variation laid out in this chapter. The use of state and regional progressivism indicators will not be employed. The hypotheses that suggested increased and regional homogeneity were based on tendencies of their decision makers to respond to regional and national trends. Since cities have not become more "alike," that segment of the analysis will not be undertaken. This chapter has sought to specify the regional parameters which underlie the spending patterns of American cities. While cities have become less regional in their fiscal behavior regarding some items, they have become even more regional regarding other items. Overall, though, cities continue to vary extensively.[13] Can region be disregarded in future equations? Regional trends do seem less evident when cities are examined rather than states.[14]

Table 5-11.--Expenditures as a Fraction of a Community's Ability to Pay: Mean Value by Region, 1960 and 1970.

Year	Expenditure Measure	City-Run Schools					Non-City-Run Schools				
		Northeast	South	Midwest	West	U.S.	Northeast	South	Midwest	West	U.S.
1960	Expenditure/GNP	.051	.053	.042	.032	.050	.045	.042	.025	.030	.036
1970		.071	.068	.049	.039	.066	.063	.046	.030	.038	.045
1960	Expenditure minus Aid/GNP	.041	.037	.031	.028	.039	.036	.034	.020	.025	.029
1970		.051	.045	.034	.031	.047	.045	.036	.023	.029	.034
1960	Expenditure Public Safety/GNP	.008	.007	.006	.008	.008	.004	.004	.002	.003	.004
1970		.010	.009	,007	.009	.009	.010	.009	.007	.010	.008
	n	62	31	13	4	110	14	51	72	38	175

The position taken here is that regional differences, though sometimes substantial, are certainly not overriding, and further analysis is not invalidated. Cities are not showing any tendency to allocate more similar portions of their economies to the public sector; nor are they budgeting more like amounts to functional items. The substantial variance in their behavior is subject to explanation by socio-economic and political differences. This explanation follows in the next chapter.

NOTES

[1]The controversy here is that between Lineberry and Fowler, "Political Ethos and the Structure of City Government," and Wolfinger and Field, "Reformism and Public Policy in American Cities." The latter authors had claimed that "ethos" or reformism lost its significance when controlling for region. Lineberry and Fowler retorted that regional control is meaningless. The position here is that region is an important American socioeconomic fact, but is not subject to meaningful control. In short, the effect of region must be specified, understood, and "lived with" statistically.

[2]Computer runs were made using OSIRIS III. Although the F ratio is the statistic usually employed in analysis of variance, eta square is appropriate to the universe of 285 cities as the exact amount of variance attributable to region.

[3]This measure consistently accounts for 40 to 50 percent of total variance in most dependent variables. The decision made here is to tabularly control for this variable, although dummy variable regression employed in Chapter VI allows "one equation" to control for its effects.

[4]This variable is used to allow for comparability between city-run and non-city-run schools on a summary measure. It will not be employed extensively in later analysis.

[5]From both state and federal sources.

[6]This statistic has been employed by John Sullivan, "Political Correlates of Social, Economic, and Religious Diversity in the American States," Journal of Politics XXXV (1973), 70-84. It is not subject to differences in values of the mean (as is the standard deviation alone) and is a useful measure of diversity.

[7]These measures will not be considered in the analysis in Chapter VI.

[8]These are Census Bureau regions. See 1972 County and City Data Book.

[9]See Daniel Elazar, American Federalism: A View From the States, 2d ed., (New York: Crowell, 1972) for an excellent treatment of the factors underlying differing policy patterns in different regions.

[10]This variable is computed as follows--(1970 expend-1960 expend)—(1970 aid-1960 aid).

[11]These variables are divided by what is loosely labeled a "GNP estimate." Gross product is the sum of all goods and services produced, or equivalently can be computed by aggregating the "value added" to a manufacture at each step with total wages paid. The computation of per capita income and value added per capita is the best available measure within the scope of this study (1950 values are not computer because per capita income is not available).

[12]These measures are available only for 1960, 1970, and 1960-1970 periods. Data for 1950 did not contain the per capita income variable necessary to compute these GNP variables.

[13]Leibert, "Municipal Functions and Expenditures," of course suggested city-run schools as a surrogate for the "responsibility" of the city to finance other functions. The situation is more complex than mere city-state divisions of fiscal responsibility. Often city-county and city-district pacts cloud the meaning of a city's budget (not to mention varying functional categories). Changes for each city, though, are subject to analysis, and this analysis of change, in effect, controls for different bases for functional expenditures.

[14]For a discussion of the relative importance of region, state, and cities, see William Lyons, David Morgan, and Michael Hall, "Multi-level Analysis in State Politics: A Reexamination," Department of Political Science, University of Oklahoma, 1974, (typewritten).

CHAPTER VI

REFORMISM AND PUBLIC CHOICE IN AMERICAN CITIES

This chapter will test the predictive power of the seven variable independent variable sets developed in Chapter IV relative to the variation in dependent variables described in Chapter V. Reformed and unreformed city givernments will be compared as separately functioning political systems. While the main focus will be on the summary financial indicator, "per capita expenditure minus aid," secondary concern will be given public safety spending. The latter is important in its primarily local fiscal responsibility as well as its substantive importance. Chapter VI will conclude with an evaluation of the testable propositions offered in Chapter III.

City School System Responsibility: The Problem of Control

Since the nature of a city's school system has been shown to have such a predictive effect, it must be controlled for in some way. Chapter V employed tabular controls; separate analyses were run for city-run and non-city-run school cities. This section will compare reformed versus unreformed cities, thus suggesting controls for reformism. One is faced with the prospect of comparing reformed and unreformed city-run school systems as well as corresponding non-city-run school systems. An equation would be required for each combination of governmental form and school system. This complication could cause a staggering number of equations and render inference difficult, if not impossible.

The posture adopted here is to control for the nature of a city's school system by entering a "dummy variable" for the presence or absence of this trait into the prediction equation. This, in effect, controls for this phenomenon, for all other coefficients in the equation reflect a variable's influence controlling for the other predictors.[2] The "reformism" variable is also subject to more than one treatment. Lineberry and Fowler have opted for a continuous reformism score ranging from one to four.[3] The view of reformism implicit in this chapter is essentially dichotomous and comparative. Again both treatments will be employed in the following analysis: reformism will be examined as an interval predictor, the three reform characteristics[4] will be summed, and tabular controls for reform will be implemented by dividing cities into reformed and unreformed categories. A relatively equal number of cities appear in each group when cities are labeled "reform" if they have a city manager and nonpartisan elections, or either of these characteristics and over half their councilmen elected at large. This admittedly arbitrary split yields 121 unreformed and 164 reformed cities. The two reformism measures yield two interpretations of reformism. The continuous measure (Lineberry-Fowler), when used in a regression equation, tells us how much the dependent variable is incremented by an increase of one unit of reformism.[5] This assumes that reformism's effect is additive, that is, that its effects can be added to those of other socio-economic predictors. While this stance will be assumed in equations treating all cities, the approach to be employed here will conceptualize reform simply as a trait subject to use as the basis for comparative analysis.[6] The methodological issue is simply that of fitting one'e statistical control to one's

theory. The question implicit in our theory of the political system is, "What differences in behavior are exhibited by reformed systems vis-a-vis unreformed systems?"

The other methodological caveat necessary at this point deals with the creation of a design which allows one to sort out the behavior attributable to the operation of reformism from that attributable to causes prior to its existence. The point can be made simply. The literature dealing with the existence of various governmental forms (see Chapter I) specifies the city types associated with the occurrence of reformed and unreformed structure. Middle class, growing, homogeneous cities tend to opt for reform governments.[7] When reformed governments are "compared" at one point in time to unreformed governments, how is one to know whether differences in behavior are dut to differences attributable to the structures, or is due to reform ethos prior to the existence of the structures? Such analyses can conclude that reformed governments tax and spend less, for example, but may only be telling us that cities which tax and spend less tend to choose reformed structures and continue to tax and spend less. The proper research question should not be "Do cities with reformed structures act differently?" but, "Do cities with reformed structures react differently from those with unreformed structures?" While we cannot specify exactly which differences are attributable to ethos in the cities prior to their choice of structures, we can control for these differences by concentrating on change. Such a query suggests a complex design. While the two structural groups merit comparison at each of the census periods, the major confrontation of the hypotheses developed in

Chapter III will involve changes in independent and dependent variables. The changes in expenditure items can be related to changes in independent variables thus, in effect, for socio-economic differences which led to the presence of the form. If form is a viable measure by which to achieve a comparison of system performance, reformed structures should react to socio-economic change in a matter different from unreformed structure.

Characteristics of Reformed and Unreformed Cities

The socio-economic characteristics of the two groups of cities are compared in Table 6-1 for each census and change period. In 1950, unreformed cities averaged over twice the population, had fewer non-whites, were poorer, younger, more densely populated, and had more manufacturing. The same comparison can be made in 1960, although the population difference had become smaller. By 1970, the population averages were still closer and the percentage of non-whites was virtually the same. At all time periods the employee/population ratios of the two groups showed little difference. When change periods are examined, however, major distinctions between reformed and unreformed cities become apparent. From 1950 to 1960, reformed cities grew almost three times as fast while the percentage of non-whites increased by twofold for unreformed cities. Reformed cities tended toward greater wealth, more white-collar employment, and less density. Similar trends continued from 1960 to 1970, although differences in income between the two groups vanished in this later period. One could conclude that reformed cities are growing more rapidly but with a slower rate of growth among blacks than their unreformed counterparts. Major changes in income occurred between 1950 and 1960.

Table 6-1.-- Socio-economic Characteristics of Reformed and Unreformed Cities, 1950-1970: Mean Comparisons

Socio-economic Measure	1950 $\bar{X}$ reformed	1950 $\bar{X}$ unreformed	1960 $\bar{X}$ reformed	1960 $\bar{X}$ unreformed	1970 $\bar{X}$ reformed	1970 $\bar{X}$ unreformed
Population	131.731	279.202	159.119	291.035	173.855	269.910
Employee/Population	.400	.412	.381	.390	.391	.399
Percent Non White	11.87	8.20	13.54	11.75	16.71	16.26
Income Factor Score	0.038	-0.051	0.137	-0.186	0.046	-0.062
Age Factor Score	0.095	-0.124	0.126	-0.171	0.019	-0.026
Employment Factor Score	-0.341	0.463	-0.303	0.411	-0.311	0.422
Density Factor Score	-0.196	0.265	-0.064	0.087	-0.089	0.121
Socio-economic Measures of Change	**1950-1960** $\bar{X}$ reformed	**1950-1960** $\bar{X}$ unreformed	**1960-1970** $\bar{X}$ reformed	**1960-1970** $\bar{X}$ unreformed		
Percent Change in Population	34.72	12.74	11.35	5.065		
Percent Change in Employee/Population	-.018	-.021	.009	.009		
Percent Change in non White	1.67	3.21	1.68	3.66		
Change Factor 1*	-0.048	0.065	0.002	-0.002		
Change Factor 2*	0.169	-0.229	0.037	-0.051		
Change Factor 3*	-0.008	0.011	-0.093	0.125		
Change Factor 4*	-0.311	0.421	0.183	-0.247		

*Change Factors		1950-1960	1960-1970	
	1	Age	Income	Reformed (n=164)
	2	Income/Employment	Education/Density	Unreformed (n=121)
	3	Income/Education	Age	
	4	Density	Youth Employment	

The two groups can likewise be compared relative to expenditure trends. The dependent variables to be stressed in this chapter are expenditure minus aid, the best summary expenditure item indicative of a city's own effort, and expenditure on public safety, the largest functional budget item as well as that item consistently increasing as a percentage of total expenditures and that item most likely to reflect social and economic change. Both expenditures will be measured in two ways. The first is a simple per capita figure; the second reflects the two items relative to the community's economic base, (these are again suffixed -GNP). Table 6-2 depicts the consistently higher per capita expenditures within both expenditure categories for unreformed structures. The GNP measures highlight additional phenomenas, however. While the two groups committed virtually the same amounts of their economies to the public sector in 1960, unreformed cities were substantially more "public" in 1970. Increases from 1960 to 1970 were much larger (.0070 to .0029) for reformed cities. Public safety/GNP measures show that although, in per capita measures, unreformed governments spent more on public safety at each period, reformed cities spent a larger proportion of their economies on this category in 1960. The change period, however, was marked by a larger increase for the unreformed group. One could reasonably characterize unreformed cities as spending more than reformed. The measurement of the dependent variable is crucial, however, When ability to pay is taken into account, unreformed cities seem much more willing to commit resources to the public sector. Expenditures must be viewed as the reaction of political systems to characteristics of their

Table 6-2.--Reformed and Unreformed Governments: Mean Values for Expenditure Measures

Expenditure	$\bar{X}$ Reformed (n=164)	$\bar{X}$ Unreformed (n=121)
Expenditure minus Aid (per capita)		
1950	$ 48.28	$ 55.65
1960	82.56	94.97
1970	146.91	178.79
1950-1960	34.28	39.32
1960-1970	64.45	83.82
Expenditure on Public Safety/Per Capita		
1950	$ 10.92	$ 11.53
1960	20.06	21.56
1970	38.28	42.15
1950-1960	9.15	10.03
1960-1970	18.22	20.58
Expenditure minus Aid/ GNP		
1960	.0291	.0292
1970	.0320	.0362
1960-1970	.0029	.0070
Expenditure on Public Safety/GNP		
1960	.0070	.0067
1970	.0083	.0085
1960-1970	.0013	.0018

environment, though, and the mere comparison of group means will not suffice. Expenditures must be viewed as functions of socio-economic conditions beyond considerations of economic base.

The Reaction of Cities to the Social and Economic Environment

The relative contribution of each socio-economic indicator to an explanation of city expenditures can best be gauged by multiple regression analysis. The multiplicity of control possibilities demands careful specification of each equation at each time period. Dependent variables will be specified in both aforementioned forms. Table 6-3 shows prediction equations for all cities at all discrete time periods. The total predictive power of the equations varies between an explanation of 40 to 50 percent of the variance of both expenditure items at all time periods. The first coefficient (X_1) for city-run schools in effect partials out the effects of city responsibility in this area. Interestingly enough, reformism, when entered as an interval independent variable, is virtually unrelated to the spending measures. Population (X_3) is positively related to both dependent measures only in 1970, and increasingly so when expenditure/GNP measures are explained. Larger cities orient a substantially larger proportion of their resources to both the total public sector and to public safety by 1970. Employee/population ratios show no consistent trends. Again, this variable has proven disappointing in its behavior. Its use will be continued, but inferences regarding its effect will be of secondary consideration. Percent non-white (X_5) is, of course, of great interest. While cities with larger non-white populations tended

Table 6-3.--Prediction Equations (Betas) for Expenditure minus Aid and Expenditure on Public Safety.

Expenditure Dependent Variable	City-Run School	Reformism	Population	Employee/ Population Ratio	Percent Non-White	Income	Age	Employment	Density	R^2
Expenditure minus Aid										
1950	+.5704 X_1	+.0069 X_2	-.0032 X_3	+.0543 X_4	-.0617 X_5	+.0870 X_6	-.1024 X_7	-.1255 X_8	+.3538 X_9	39.8%
1960	+.5038 X_1	+.0217 X_2	+.0828 X_3	+.0631 X_4	-.0385 X_5	+.0348 X_6	-.2138 X_7	+.0134 X_8	+.2186 X_9	49.0%
1970	+.5056 X_1	-.0734 X_2	+.1012 X_3	+.0196 X_4	+.1266 X_5	+.2039 X_6	-.1417 X_7	-.0405 X_8	+.2210 X_9	49.8%
GNI 1960	+.4573 X_1	+.0141 X_2	-.0454 X_3	-.1208 X_4	-.0484 X_5	-.0528 X_6	-.2009 X_7	-.2812 X_8	+.2420 X_9	41.1%
GNP 1970	+.4771 X_1	-.0582 X_2	+.3090 X_3	-.0591 X_4	+.0775 X_5	+.0402 X_6	-.1540 X_7	-.2411 X_8	+.1689 X_9	50.5%
Public Safety										
1950	+.1936 X_1	+.0834 X_2	-.0044 X_3	-.0166 X_4	-.0424 X_5	+.1098 X_6	-.2921 X_7	-.0109 X_8	+.4869 X_9	42.6%
1960	+.1702 X_1	+.0697 X_2	+.0534 X_3	+.1297 X_4	-.0673 X_5	-.0113 X_6	-.3415 X_7	+.0640 X_8	+.3885 X_9	44.5%
1970	+.2255 X_1	-.0051 X_2	+.1710 X_3	-.0317 X_4	+.2117 X_5	+.1879 X_6	-.2094 X_7	+.1302 X_8	+.4186 X_9	50.9%
GNP 1960	+.1620 X_1	+.0479 X_2	+.0351 X_3	-.0987 X_4	-.0756 X_5	-.1201 X_6	-.2472 X_7	-.3597 X_8	+.3451 X_9	39.0%
GNP 1970	+.2081 X_1	-.0021 X_2	+.3746 X_3	-.1610 X_4	+.1312 X_5	-.0247 X_6	-.1717 X_7	-.1923 X_8	+.2970 X_9	49.8%

n = 285

to spend less in both 1950 and 1960, betas increased substantially for both 1970 equations. Unlike the situation with population, this measure is less important when expenditures are viewed as percentages of the city's economic base. Larger cities are foreed to spend a larger proportion of their wealth, but cities with more blacks increased spending sharply in 1970, not in terms of community wealth, but raw dollars. At least when equations involving all cities are concerned, size of population begins to exert a substantial stress on community resources, suggesting that larger cities have become more inefficient social units by this date.

The relationships between socio-economic change and expenditure reaction provides additional insight into the above pehnomena. As Table 6-4 shows, change in population, or growth, is not substantially related to change in expenditure patterns. This merits closer methodological examination. While larger cities must seriously fact the problem of enlarging their public sector, growing cities exhibit no such tendency with controls for other items. It is not growth, but size, that places increased demands on spending. Percent non-white, on the other hand, shows an opposite pattern, particularly on public safety spending. Changes in non-white population were related to major increases in fire and police spending both from 1950-1960 and 1960-1970. The increases in the proportion of blacks caused substantial increases in the amount of the communities' economy allocated to public safety. Again, with all cities considered together, city-run school captures a good part of the variance. The politization of the city in 1960 shows little relationship to spending patterns in 1970.

Table 6-4.--Prediction Equations (Betas): Change in Expenditure minus Aid and Change in Expenditure minus Public Safety.

Expenditure Measure	City-Run School	Reformism	Change in Population	Change in Employment/ Population	Change in Percent Non-White	Change Factor 1	Change Factor 2	Change Factor 3	Change Factor 4	Voting 1960	R^2
Expenditure Aid											
1950-1960	+.1431 X_1	+.0642 X_2	+.0312 X_3	-.0726 X_4	+.1872 X_5	-.0154 X_6	+.0826 X_7	-.0296 X_8	+.1417 X_9		12.9%
1960-1970	+.1644 X_1	-.0005 X_2	-.1250 X_3	-.1360 X_4	+.0229 X_5	+.3580 X_6	+.1115 X_7	-.0508 X_8	+.1935 X_9		15.7%
1960-1970 GNP	+.2568 X_1	-.0851 X_2	-.1350 X_3	-.0573 X_4	+.0562 X_5	+.1129 X_6	+.1524 X_7	+.1467 X_8	+.1908 X_9	+.0081 X_{10}	18.1%
Expenditure-Public Safety											
1950-1960	+.1057 X_1	+.0457 X_2	+.1563 X_3	-.1095 X_4	+.3758 X_5	-.1805 X_6	+.0604 X_7	-.0369 X_8	+.1512 X_9		38.4%
1960-1970	+.1688 X_1	+.1306 X_2	+.0936 X_3	+.0239 X_4	+.3012 X_5	-.0715 X_6	+.1087 X_7	+.0408 X_8	-.0995 X_9		35.3%
1960-1970 GNP	+.2269 X_1	-.0470 X_2	-.1066 X_3	-.0515 X_4	+.3216 X_5	-.0909 X_6	+.1030 X_7	+.0310 X_8	+.1765 X_9	-.1047 X_{10}	13.6%

Change Factor	1950-1960	1960-1970	(n=285)
1	Age	Income	
2	Income-Employment	Education-Density	
3	Income-Education	Age	
4	Density	Youth Employment	

Table 6-5 shows change equations broken down by city-run versus non-city-run schools. Here the power of reformism as an interval variable can be gauaged, where the more "reformism" a city has can be translated into effects upon a city's expenditure for each change period.[8] Reformism is associated with a mobilization of less community resources from 1960-1970. Otherwise its effect is not substantial. The effect that population increase exerted from 1950-1960 on total expenditure for city-run schools suggests that population growth strongly affected the education portion of the budget during this period of urbanization. Changes in population and density also caused like budget increases for this group. From 1960 to 1970, however, this group of cities showed a relationship more closely tying spending increases to income increases. Non-city-run systems' spending patterns are not tied to socio-economic change unless spending is considered relative to ability to pay. Here reformism becomes important, as do three change factors. City-run schools, though, are harder to account for with the GNP spending variables. Obviously more understanding of the nature of reformism can be gleaned from "switching" the controls for city-run schools and reformism. The "city-run" influence can be "controlled" by its use as a dummy variable, and separate analyses can be run for reformed and unreformed cities.

The differences in the functioning of reformed and unreformed political systems for all discrete time periods are shown in Table 6-6. The city-run school coefficients (X_1) are consistently high, and in effect, allow for comparison of all other coefficients of the equations. Socio-economic variables are consistently better predictors of expenditures

Table 6-5.--Prediction Equations (Betas): Changes in Expenditure minus Aid for City-Run and Non-City-Run School Systems.

City Type	Reformism	Change in Population	Change in Employment/ Population	Change in Percent Non-White	Change Factor 1	Change Factor 2	Change Factor 3	Change Factor 4	Voting 1960	R^2
City-Run Schools										
1950-1960	-.0113 X_1	+.3516 X_2	+.1883 X_3	+.2800 X_4	-.1594 X_5	+.0276 X_6	-.1691 X_7	+.2281 X_8		20.3%
1960-1970	+.1472 X_1	-.0795 X_2	-.1830 X_3	+.0896 X_4	+.5793 X_5	+.1181 X_6	-.0748 X_7	+.1394 X_8		27.7%
Non-City-Run Schools										
1950-1960	+.1619 X_1	-.1939 X_2	-.0212 X_3	+.1302 X_4	+.0320 X_5	+.0591 X_6	+.0282 X_7	+.0868 X_8		08.7%
1960-1970	-.1517 X_1	-.1202 X_2	-.1362 X_3	+.0200 X_4	+.1138 X_5	+.1802 X_6	-.0299 X_7	+.1785 X_8		09.3%
1960-1970 GNP										
City-Run Schools	+.1382 X_1	+.1074 X_2	-.2013 X_3	+.1984 X_4	+.2934 X_5	+.0859 X_6	-.0215 X_7	+.1929 X_8	+.1912 X_9	14.3%
Non-City-Run Schools	-.2298 X_1	-.1790 X_2	-.0178 X_3	-.0230 X_4	-.0992 X_5	+.3194 X_6	+.2539 X_7	+.1997 X_8	-.0799 X_9	25.3%

Change Factors	1950-1960	1960-1970
1	Age	Income
2	Income/Employment	Education/Density
3	Income/Education	Age
4	Density	Youth Employment

City Run Schools (n=110)

Non-City Run Schools (n=175)

Table 6-6.--Prediction Equations (Betas): Reformed and Unreformed Government Structures and Expenditure minus Aid.

City Type		City Run School School	Population	Employment/ Population	Percent Non-White	Income	Age	Employment	Density	R^2
1950	Reformed	+.3613 X_1	+.0520 X_2	+.0806 X_3	-.1521 X_4	-.0702 X_5	-.1198 X_6	-.0726 X_7	+.4302 X_8	47.1%
	Unreformed	+.6948 X_1	+.0192 X_2	+.0340 X_3	+.0130 X_4	+.2103 X_5	-.0837 X_6	-.1105 X_7	+.2321 X_8	72.6%
1960	Reformed	+.3427 X_1	+.0418 X_2	+.0275 X_3	-.0182 X_4	-.1429 X_5	-.3406 X_6	-.0069 X_7	+.2814 X_8	44.3%
	Unreformed	+.6446 X_1	$\pm$.1440 X_2	+.1772 X_3	-.0704 X_4	+.1277 X_5	-.0234 X_6	+.0576 X_7	+.0944 X_8	63.8%
1970	Reformed	+.4176 X_1	+.1176 X_2	+.0229 X_3	+.0202 X_4	-.0026 X_5	-.1524 X_6	-.0449 X_7	+.3260 X_8	43.8%
	Unreformed	+.5553 X_1	+.1160 X_2	+.0264 X_3	+.2180 X_4	+.3394 X_5	-.1375 X_6	-.0439 X_7	+.1677 X_8	58.8%
1960 GNP	Reformed	+.2820 X_1	-.0157 X_2	-.2073 X_3	-.0598 X_4	-.2308 X_5	-.2800 X_6	-.2603 X_7	+.2473 X_8	45.4%
	Unreformed	+.6357 X_1	-.0909 X_2	+.0967 X_3	-.0578 X_4	+.1202 X_5	-.0551 X_6	-.2393 X_7	+.2114 X_8	55.9%
1970 GNP	Reformed	+.4070 X_1	+.0572 X_2	-.0878 X_3	+.0416 X_4	-.1381 X_5	-.1729 X_6	-.2157 X_7	+.2128 X_8	41.0%
	Unreformed	+.4868 X_1	+.3964 X_2	+.0184 X_3	+.0878 X_4	+.1621 X_5	-.1009 X_6	-.2201 X_7	+.1879 X_8	63.8%

Reformed (n=164)

Unreformed (n=121)

in unreformed cities. Each year will be subject to separate comparison between the two government types; following this, trends will be examined. In 1950 reformed governments responded to increased density with increased spending while their unreformed counterparts were likewise responsive to income and density. By 1960, both groups were less predictable with reformed structures increasing their spending in "older" cities (cities with older populations). Still less explanation is possible with our equations by 1970, with more densely populated reformed cities still spending more. Here unreformed cities increased spending in response to wealth and increased non-white populations. When cities' spending is viewed as a fraction of total economic activity, a slightly different picture emerges. Greater wealth has almost no effect on reformed cities, while higher income unreformed cities spend more. The former group spends less in older cities, both spend less in manufacturing cities and more in denser ones. By 1970, population size finally becomes important in unreofrmed cities. Population size had been noted (see Table 6-5) as being associated with an increased public sector for all cities; actually this phenomenon is common only in unreformed cities. Otherwise, 1970's equations resemble closely those for 1960.

As far as per capita expenditure minus aid is concerned, reformed cities tend to be less responsive than their unreformed counterparts to the socio-economic climate, and generally the latter spend more as wealth increases while reformed cities spend less. One particular functional expenditure merits close scrutiny, however, if the nature of systems extractive response is to be clear. This item, the largest single category after education, is public safety (fire and police).

When public safety is viewed as the dependent variable, unreformed governments are still more responsive to the environment. The percent of explained variance ranges between 37 and 70 percent (see Table 6-7). In 1950 the main "cause" of fire and police spending is density. This remains the case throughout all time periods for both city types. The same situation exists for older cities. Otherwise, major trends involve the percentage of non-whites in a city. Reformed cities' expenditures on public safety seem unrelated to this variable. Unreformed cities, on the other hand, show an increasing responsiveness to larger black populations. By 1970 the beta is .4172 as compared to .0496 for reformed structures. The GNP variables illuminate the complexity of the situation, though, for the effects of larger non-white populations is less influential for reformed cities while population size becomes important for unreformed cities. One must conclude that unreformed cities allocate more of their resources to the public sector in larger cities while expenditure on fire and police is more an internal budget decision directly related to larger proportions of blacks. This decision is not necessarily tied to the community's economic base.

A different picture can be obtained involving both variable sets when changes in expenditures are related to changes in environment for our two dependent variables. The equations (Table 6-8) for per capita spending minus aid are less able to account for variance. From 1950 to 1960, reformed cities were more responsive to the influx of blacks, whereas by the 1960-1970 period, unreformed governments react strongly to increased income. It is the 1960-1970 change relative to the cities' ability to pay that is of the most interest at this point, however. Here a new

Table 6-7.--Prediction Equations (Betas): Reformed and Unreformed Government Structures and Expenditure-Public Safety

City Type		City Run School	Population	Employment/ Population	Percent Non-White	Income	Age	Employment	Density	R^2
1950	Reformed	+.1189 X_1	+.0832 X_2	-.0033 X_3	-.1384 X_4	+.0917 X_5	-.3217 X_6	-.0143 X_7	+.4573 X_8	42.3%
	Unreformed	+.3358 X_1	-.0105 X_2	+.0006 X_3	+.1307 X_4	+.0912 X_5	-.2236 X_6	+.0407 X_7	+.4640 X_8	50.2%
1960	Reformed	+.0301 X_1	+.1304 X_2	+.1599 X_3	-.0223 X_4	-.0501 X_5	-.3950 X_6	+.0655 X_7	+.3380 X_8	43.6%
	Unreformed	+.3192 X_1	+.0463 X_2	+.1121 X_3	+.2128 X_4	+.0161 X_5	-.2680 X_6	+.0259 X_7	+.4066 X_8	49.4%
1970	Reformed	+.1481 X_1	+.1436 X_2	+.0321 X_3	+.0496 X_4	+.1069 X_5	-.2096 X_6	+.1363 X_7	+.4458 X_8	41.6%
	Unreformed	+.3172 X_1	+.1824 X_2	-.2001 X_3	+.4172 X_4	+.3197 X_5	-.3186 X_6	+.1719 X_7	+.4085 X_8	65.5%
1960 GNP	Reformed	+.0102 X_1	+.0495 X_2	-.1202 X_3	-.0747 X_4	-.2143 X_5	-.2653 X_6	-.3051 X_7	+.3006 X_8	36.8%
	Unreformed	+.3201 X_1	-.0074 X_2	-.0691 X_3	-.0815 X_4	-.0011 X_5	-.2595 X_6	-.4061 X_7	+.4275 X_8	49.1%
1970 GNP	Reformed	+.0957 X_1	+.0432 X_2	-.1517 X_3	+.1052 X_4	-.1137 X_5	-.1516 X_6	-.2402 X_7	+.2695 X_8	29.1%
	Unreformed	+.2941 X_1	+.4606 X_2	-.2288 X_3	+.1700 X_4	+.1021 X_5	-.2635 X_6	-.1319 X_7	+.3901 X_8	72.0%

Reformed (n=164)

Unreformed (n=121)

Table 6-8.--Prediction Equations (Betas): Reformed and Unreformed Government Structures and Changes in Expenditure minus Aid.

City Type	City-Run School	Population	Employment/ Population	Percent Non-White	Change Factor 1	Change Factor 2	Change Factor 3	Change Factor 4	Voting (1960)	R^2
1950-1960										
Reformed	+.0487 X_1	-.0644 X_2	+.0290 X_3	+.2015 X_4	-.0962 X_5	+.0182 X_6	-.0066 X_7	+.1314 X_8		11.2%
Unreformed	+.2200 X_1	-.0912 X_2	+.0532 X_3	+.1349 X_4	+.1179 X_5	+.1391 X_6	-.0546 X_7	+.1172 X_8		18.9%
1960-1970										
Reformed	+.2195 X_1	-.1890 X_2	-.1493 X_3	-.0024 X_4	+.1972 X_5	+.2119 X_6	-.0084 X_7	+.1905 X_8		16.7%
Unreformed	+.0650 X_1	-.0224 X_2	-.1419 X_3	+.0349 X_4	+.4482 X_5	+.0806 X_6	-.1027 X_7	+.1734 X_8		23.7%
1960-1970 GNP										
Reformed	+.3183 X_1	-.2525 X_2	-.0556 X_3	+.0077 X_4	-.0388 X_5	+.2321 X_6	+.2502 X_7	+.2162 X_8	-.1027 X_9	29.0%
Unreformed	+.0288 X_1	+.1045 X_2	-.1702 X_3	+.0170 X_4	+.2951 X_5	+.1868 X_6	+.0655 X_7	+.1740 X_8	+.3936 X_9	26.9%

Change Factors	1950-1960	1960-1970	
1	Age	Income	Reformed (n=16)
2	Income/Employment	Education/Density	
3	Income/Education	Age	Unreformed (n=121)
4	Density	Youth Employment	

independent variable, the percent of the population voting in 1960,[9] is introduced. This measure tests a major hypothesis of this study, that unreformed cities will respond to electoral pressure to increase expenditures for their public sector as reformed structures respond by decreasing theirs. Such is the case when the public sector commitment is operationalized as "expenditure minus aid." The beta for turnout for unreformed structures is .3936; that for reformed cities is -.1027. Above and beyond social change, the cities respond as hypothesized (see Chapter III). We anticipated a movement toward a larger public sector within cities with unreformed structures when electoral involvement in these cities was high. In reformed cities the opposite reaction to participation was envisioned.

Table 6-9 contains prediction equations for changes in public safety spending. Major attention must be paid to changes in the black populations. While the information in Table 6-7 led us to conclude that larger non-white populations among all cities seemed to cause more fire and police spending, the question remains, "How do the two city types respond to increases in the proportions of blacks in their populations?" Unreformed governments are very responsive, especially from 1950-1960. Although at discrete time periods the percentage of blacks was not strongly associated with an increased orientation to the public sector, the dynamics of black migration and increased allocation of community resources to public safety bring about a substantial relationship between increased black populations and increased fire and police spending for both governmental structures. But unreformed governments are consistently

Table 6-9.--Prediction Equations (Betas): Reformed and Unreformed Government Structures and Changes in Expenditure-Public Safety

City Type	City Run School	Population	Employment/ Population	Percent non-White	Change Factor 1	Change Factor 2	Change Factor 3	Change Factor 4	Voting (1960)	R^2
1950-1960										
Reformed	+.0031 X_1	-.1191 X_2	+.2998 X_3	+.2281 X_4	-.2137 X_5	+.0743 X_6	-.1089 X_7	+.1686 X_8		40.1%
Unreformed	+.1690 X_1	-.1439 X_2	-.0758 X_3	+.5297 X_4	-.1537 X_5	+.2522 X_6	+.0538 X_7	+.1433 X_8		44.2%
1960-1970										
Reformed	+.2319 X_1	-.1419 X_2	-.0124 X_3	+.1273 X_4	+.1536 X_5	+.2696 X_6	+.0534 X_7	-.0698 X_8		26.7%
Unreformed	+.2757 X_1	-.1850 X_2	-.2840 X_3	+.4499 X_4	+.2755 X_5	+.0441 X_6	+.0017 X_7	+.0038 X_8		52.3%
1960-1970 GNP										
Reformed	+.1920 X_1	-.0769 X_2	+.0334 X_3	+.2463 X_4	-.1287 X_5	+.0893 X_6	+.0317 X_7	+.1974 X_8	-.0832 X_9	21.3%
Unreformed	+.1197 X_1	-.1260 X_2	-.2208 X_3	+.3968 X_4	+.0173 X_5	+.1268 X_6	+.0025 X_7	+.1005 X_8	-.0290 X_9	46.2%

Change Factors	1950-1960	1960-1970	
1	Age	Income	
2	Income/Employment	Education/Density	Reformed (n=164)
3	Income/Education	Age	
4	Density	Youth Employment	Unreformed (n=121)

more responsive to both this and other socio-economic changes. The proportion of the population voting in 1960 proved unrelated to police and fire increases.

Finally the total and functional expenditure picture from 1960 to 1970 needs to be detailed. The concern here is with changes in spending measures as a function of community wealth, especially as these changes relate to the percent voting in 1960. Table 6-10 allows one to examine functional expenditure changes in this light. Total expenditures minus aid have already been discussed. Again note the coefficients of X_9. Functional expenditures show differing reactions to different stimuli. Public safety increases can be attributable, as discussed previously, to increases in percent of a city's population composed of non-whites. Unreformed cities show no patterns in highway expenditures which can be related to changes in independent variables. Reformed governments respond to decreases in citizens' age with increased highway spending. Unreformed structures seem also to react to electoral turnout in 1960 with increased spending on sanitation whereas reformed cities spend more on sanitation as they become more dense and less wealthy, or in other words, as they become less middle class.

It is clear that reformism, though not significant in any equation as an interval variable, is a meaningful criterion by which to compare functioning political system. Unreformed cities are more responsive to socio-economic conditions, both at each census period and through each change period. By 1970 larger unreformed cities were characterized by their commitment of greater shares of their economies to the public

Table 6.10.—Prediction Equation (Betas); Reformed and Unreformed Government Structures and Functional Expenditure Changes/GNP 1960-1970

Expenditure Measure	City Run School	Change in Population	Change in Employment/ Population	Change in Percent Non-White	Change Factor Score-Income	Change Factor Score-Education Density	Change Factor Score-Age	Change Factor Score-Youth/ Employment	Voting (1960)	R^2
Expenditure minus Aid										
Reformed	+.3183 X_1	-.2525 X_2	-.0556 X_3	+.0077 X_4	-.0388 X_5	+.2321 X_6	+.2502 X_7	+.2162 X_8	-.1027 X_9	29.0%
Unreformed	+.0288 X_1	+.1045 X_2	-.1702 X_3	+.0170 X_4	+.2951 X_5	+.1868 X_6	+.0655 X_7	+.1740 X_8	+.3946 X_9	26.9%
Public Safety										
Reformed	+.1920 X_1	-.0769 X_2	+.0334 X_3	+.2463 X_4	-.1287 X_5	+.0893 X_6	+.0317 X_7	+.1974 X_8	-.0823 X_9	21.3%
Unreformed	+.1997 X_1	-.1260 X_2	-.2208 X_3	+.3968 X_4	+.0173 X_5	+.1268 X_6	+.0025 X_7	+.1005 X_8	-.0290 X_9	46.2%
Highways										
Reformed	+.2049 X_1	-.0946 X_2	+.0413 X_3	+.0153 X_4	-.1643 X_5	+.1279 X_6	+.2410 X_7	+.1758 X_8	-.1182 X_9	16.6%
Unreformed	-.0260 X_1	+.0830 X_2	+.0202 X_3	-.0905 X_4	+.0748 X_5	+.1308 X_6	+.0856 X_7	-.0972 X_8	+.1209 X_9	05.4%
Sanitation										
Reformed	+.0884 X_1	-.0288 X_2	-.0254 X_3	+.0145 X_4	-.1950 X_5	+.2663 X_6	+.0977 X_7	+.0005 X_8	+.1560 X_9	15.9%
Unreformed	+.0005 X_1	+.0015 X_2	-.0798 X_3	-.1650 X_4	+.0209 X_5	-.0798 X_6	-.0627 X_7	+.0876 X_8	+.2859 X_9	11.2%

Reformed (n=164)

Unreformed (n=121)

sector. Also unreformed cities reacted more strongly to increases in the black population, especially in fire and police spending. Over time reformed governments reacted to change by allocating more goods to the public sector, especially when electoral involvement was initially high.

Conclusions

In this chapter we have compared two types of political systems relative to their response to socio-economic and political pressures. Unquestionably unreformed political structures are more responsive to changes in their environments, especially the migration of non-whites to these cities. These unreformed cities spend more and had to increase their public sectors when electoral involvement is higher. Reformed cities behavior is less predictable. They are not as responsive and are less efficient in their response to change. One must conclude that they are indeed representative of a middle class, or reform, ethos, which would seek to minimize the "politics" of managing a city.

The multivariate analysis employed here has attempted to explain the large, continued variation in city expenditure patterns with socio-economic indicators. We have shown that, although socio-economic variables are vitally important, they do not overshadow the importance of political systems' concerns. At the very least, it has been demonstrated that our two political measures, turnout and reform, exert substantial influence upon the nature of urban policy outputs.

NOTES

[1]These equations have been computer for expenditure minus aid. See Appendix.

[2]See Draper and Smith, Applied Regression Analysis.

[3]Lineberry and Fowler, "Reformism and Public Policies in American Cities." Also Cole, "The Urban Policy Process," implicitly recognized an additive model of reformed structures.

[4]These are percent councilmen elected at large, nonpartisanship, and city manager.

[5]With unstandardized regression coefficients, we are considering a one unit (one reformed characteristic) increase in reformism as increasing spending a given number of dollars. Standardized coefficients (beta weights) relate a standard deviation movement of independent variable to increase of the dependent variable measure in standard deviations. The latter measure allows an easy gauging of the relative importance of the independent variables in an equation and will be employed in this analysis. See Blalock, Social Statistics, pp. 442-490.

[6]The methodological decision here is to consider reformism a trait made up of three equally important segments. The resulting dichotomy does not tell us which of the traits is most important or how the three interact. That is beyond the scope of this analysis.

[7]Kessel, "Government Structure and Political Environment."

[8]The other predictors' effects are gauaged "independently," both of each other and of X_1.

[9]This measure is for the county in which a city lies. Admittedly this can, at times, reflect inaccurately upon the political competition but is the best available measure across all 285 cities. Here our measure is the percent of registered voters voting in the 1960 presidential election.

CHAPTER VII

CONCLUSIONS

The results of the preceding analysis demonstrate the applicability of many theoretical constructs to the study of urban politics. Ours has been a comparative study. Two systems, reformed and unreformed cities, have been shown to behave in different ways relative to a major function, the extractive function. As we stressed in Chapter VI, the uniqueness of our approach stems from the dynamic element of the analysis over time. Cities have also been compared relative to a performance criterion.

The study of urban policy was initially placed in perspective in Chapter I. Here the political ethos (reformism) controversy was shown to be a major research concern, along with the general question underlying all comparative policy research: "Do political variables exert any measurable independent influence on policy when socio-economic forces have been taken into account?"

In Chapter II a theoretical perspective was developed within which to test the viability of reformism as a construct by which to compare urban political systems. It was discovered that one would find ample theoretical basis for expecting that cities with reformed political structures would tend to opt for smaller public economic sectors, or that reformed and unreformed structures would function differently relative to one major political task--the extractive function. The degree to which cities expanded their extractive efforts was demonstrated to

represent the degree to which a city chose to commit resources to the public, as opposed to the private sector. This public choice would be expected to vary with differing political environments. Hypotheses were constructed which represented the points of tangency between several heretofore unconnected theoretical dimensions. Systems theory and structural-functional analysis were used as paradigms within which to operationalize a single comparative research effort, an effort testing propositions culled both directly from the urban policy literature as well as those transposed from the more esoteric public choice and positive theory perspectives.

Findings add much to our knowledge of the urban political milieu. First the changing socio-economic environment was examined over a twenty year period. While the overall urban social and economic picture shows relative stability, important dynamic elements were isolated upon. Increased urban well being became a phenomenon related to the development of a suburban lifestyle, whereas previously increasing city wealth had been related to the increasing manufacturing activity within a city.

Chapter V concentrated upon the aggregate analysis of city spending patterns over the period from 1950 to 1970. Contrary to our expectations, cities showed no inclination to behave in a more similar manner, either regionally or nationally. A great deal of variation continued into 1970. To what can these continued differences be traced? We have shown that unreformed cities' varying behavior is consistently easier to predict from socio-economic measures. These cities are more responsive to their environment; not only do they spend more, but they react more strongly to changes in the racial makeup of their populations (notably increased

proportions of blacks). Again the key to this study is in the concept of reaction. It is not sufficient to discover that reformed and unreformed cities are, at any given time different; it is more important that they react differently to socio-economic and political change.

The reaction of unreformed cities is most striking when the increased size of the "public" portion of the cities' economies is examined relative to the politicization of their citizenry ten years prior. Here the two types of urban systems show marked differences in their reactions. Unreformed cities increase their public sectors; this increase is substantial and remains even after controls for socio-economic change. Reformed cities, on the other hand, reduce their public sectors under the same circumstances.

These findings do much to underline the importance of the reform of urban political structures. Decision-makers in these cities apparently feel pressure to act in different ways from those in unreformed cities. Unreformed cities leaders apparently meet increased electoral pressure to maintain their office by expanding the public sector. This tendency is even more clearcut when the influence of socio-economic change has had its effect upon spending. Leaders in reformed cities apparently respond to increased citizen participation by reducing their public sectors. This measurement of performance has shown the importance of political structure as a classificatory mechanism by which to examine the urban political system. Different political systems react to stimuli in different ways. At this point we shall evaluate the hypotheses developed in Chapter III. Finally, we will conclude by evaluating our findings relative to the public policy and ethos literature.

Evaluation of Hypotheses

Group 1

A. Since the literature indicates a greater responsiveness on the part of non-reformed governments, those cities with non-reform structures will exhibit more response to socio-economic environmental change than their reformed counterparts, with regard to functional expenditures.

This hypothesis is confirmed. At almost all times it is easier to predict expenditures in unreformed cities from socio-economic measures.

B. Since reformed structures are more "efficient" than unreformed structures, increases in expenditures in the former will be more closely tied to increases in taxation.

Hypothesis B cannot be tested; correlations between taxing and spending measures are too high to allow for valid inference.[1]

C. City expenditure patterns will tend to become more alike within regions over time.

As discussed in Chapter V, this hypothesis must be rejected.

Group 2

A. Cities with reformed structures will show a tendency toward a smaller public sector than those with unreformed structures.

Table 6-2 shows that this statement is verified, especially by 1970.

B. As stress in the environment increases over time, cities will show a tendency toward an "equilibrium" government spending limit relative to their total.

No evidence can be found to verify this hypotheses. The fact that population size is so heavily related to an increased public sector in 1970 indicates that no leveling off in public choice of increased spending can be found.

Group 3

A. The existence of more electoral involvement in the local environment should accompany that of unreformed structures.

This hypothesis has been verified. While mean turnout (1960) for unreformed cities was 63.5 percent, that for reformed governments was only 47.0 percent.

B. The more competitive the local political environment, the larger the "public sector of the economy.

Correlations between electoral involvement in 1960 and spending relative to the city's economy in 1970 and increases from 1960 to 1970 are .22 and .15 respectively. This hypothesis is verified.

C. The less electoral involvement in the local environment, the less taxation (and expenditure) can be expected. (Reformed Structures)

Chapter VI has shown this hypothesis to be true (see Table 6-8). Reformed governments have reacted to competition with a decreased public sector.

D. If a greater amount of electoral involvement exists at time (A), expenditures should demonstrate an increase at time (A + 10). (Unreformed Structures)

Chapter VI (Table 6-8) has also provided ample verification of this statement. Hypotheses C and D are extremely important. Their acceptance does much to validate the theoretical roots of this analysis. Reformed and unreformed systems react in different ways to both political and socio-economic pressures. The latter are indeed more responsive. Their leaders meet increased pressure to maintain their office by expanding the public sector. This tendency is even more clearcut when the influence of socio-economic change has been controlled for. Leaders in reformed cities respond to increased participation by reducing their public sectors. This measurement of performance has shown the importance of political structure as a classificatory mechanism by which to examine the urban political system. The approach has been, in effect, comparative. Different political systems react to stimuli in different ways; the reformed political structures' performance of its "extractive" function is substantially a minimizing function. Distribution is carried out within the parameters of a minimal public sector. Unreformed structures seem primarily to perform a distributive function. Demands are more efficiently processed and less constraints are placed upon budget size.

Urban Policy Analysis In Perspective

Hopefully this exercise has provided more than a time series expenditure description. An auxilliary goal has been a meaningful operationalization of the concept of the urban political system. The concepts of systems theory (augmented by those from structural-functionalism) have

guided this study from the outset. The paradigm employed here has shown that there exists a valid intersection between systems theory, structural-functional analysis, public policy literature, ethos theory, and finally, public choice theory.

The study of public policy has long concentrated upon the importance of political system variables relative to socio-economic indicators. Notable were the initial findings of Thomas Dye.[2] His results tended to attribute little importance to political systems indicators for the American states. Others found certain political variables to be important determinants of policy.[3] Much the same confusion underlies the state of what has been labeled "ethos theory." Lineberry and Fowler[4] found that reformed cities were less efficient translators of socio-economic inputs to expenditure outputs. Their conclusion that form of government is an important determinant of policy output is by no means left unchallenged. Cole[5] and others, by utilization of different measures of policy output had left the viability of reform in question.

The debate over the importance of urban political structure relative to policy output is further clouded by the fact that one cannot sort out behavior attributable to structural differences from that attributable to causes which led the city to adopt a particular structure. No study to this point has sought to unravel, or at least control for, the multitude of possible interpretations of differences in urban political performance. Our position is that no testing of the importance of urban political structure is possible without consideration of the time dimension. The contribution of our analysis has been its "control" for prior influences on choice of structure.

Our measure of policy performance has been through a comparison of urban expenditure patterns. Although there is a great body of literature dealing with this subject, rarely are political variables even considered. Our findings have done much to demonstrate the usefulness of aggregate expenditure analysis to the more general study of urban policy. Multivariate expenditure analysis is the best method by which to gauge the importance of a plethora of predictors, both socio-economic and political. We have found that political variables are important: that reformed cities are less efficient translators of environmental pressures into policy outputs, that reformed structures tend to keep their public sectors smaller, and that reformed cities spend less following higher electoral involvement than their unreformed counterparts. From a larger public policy perspective, we have demonstrated the importance of both socio-economic and political system variables. Our methodology has allowed a comparative perspective stressing the varying reactions of different political systems to socio-economic inputs.

This volume's contribution to the study of urban policy is signifigant. We have found substantial differences between the performances of reformed and unreformed city structures. Generally those who maintained that unreformed cities' spending would be greater and more tied to inputs have been vindicated. Further differences, however, were demonstrated when electoral involvement of the citizenry was considered. Reformed cities not only act differently from unreformed cities, they react differently, and their differences do much to demonstrate the results of the reform movement. Politics has been removed to a certain

degree from urban management in these cities. The extent to which this is healthy for a democracy is open to debate. Any democratic theorist who favors this development, however, must question the worthiness of a type of political system which is demonstrably less responsive to its environment.

NOTES

[1]Correlations were consistently between .89 and .93 for each taxing-spending dyad.

[2]Dye, Politics, Economics, and the Public, p. 4.

[3]Dawson and Robinson, "Interparty Competition, Economic Variables, and Welfare Policies in the American States."

[4]Lineberry and Fowler, "Reformism and Public Policy in American Cities."

[5]Cole, "The Urban Policy Process."

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APPENDIX A

CITIES IN ANALYSIS SET

Alabama

Birmingham
Gadsden
Mobile
Montgomery
Tascaloosa

Arizona

Phoenix
Tucson

Arkansas

Fort Smith
Little Rock
North Little Rock

California

Alahambra
Alameda
Bakersfield
Berkeley
Burbank
Compton
Fresno
Glendale
Inglewood
Los Angeles
Long Beach
Oakland
Palo Alto
Pasadena
Pomona
Riverside
Richmond
San Bernadino
San Diego
San Francisco
San Jose
San Leandro
San Mateu
Sacramento
Santa Ana
Santa Barbara

California (cont.)

Santa Monica
South Gate
Stockton
Vallejo

Colorado

Colorado Springs
Denver
Pueblo

Connecticut

Bridgeport
Hartford
Meriden
New Britain
New Haven
Norwalk
Stamford
Waterbury

Delaware

Wilmington

Florida

Fort Lauderdale
Jacksonville
Miami
Miami Beach
Orlando
Pensacola
St. Petersburgh
Tampa
West Palm Beach

Georgia

Albany
Atlanta
Augusta
Columbus
Macon
Savannah

Illinois

Aurora
Berwyn
Chicago
Cicero
Decatur
East St. Louis
Eutnston
Joliet
Oak Park
Peoria
Rock Island
Rockford
Waukegon

Indiana

East Chicago
Evansville
Fort Wayne
Gary
Hammond
Indianapolis
Muncie
South Bend
Terre Haute

Iowa

Cedar Rapids
Council Bluffs
Davenport
Des Moines
Dubuque
Sioux City
Waterloo

Kansas

Kansas City
Topeka
Wichita

Kentucky

Covington
Lexington
Louisville

Louisiana

Baton Rouge
Lake Charles
Monroe
New Orleans

Maine

Portland

Maryland

Baltimore

Massachusetts

Boston
Brockton
Cambridge
Chicopee
Fall River
Holyoke
Lowell
Lynn
Lawrence
Malden
Medford
Newton
New Bedford
Pittsfield
Quincy
Somerville
Springfield
Waltham
Worchestor

Michigan

Ann Arbor
Bay City
Dearborn
Detroit
Flint
Grand Rapids
Jackson
Kalamazoo
Lansing
Pontiac

Minnesota

Duluth
Minneapolis
St. Paul

Mississippi

Jackson

Missouri

Independence
Kansas City
St. Joseph
St. Louis
Springfield
University City

Montana

Billings
Great Falls

Nebraska

Lincoln
Omaha

Nevada

Reno

New Hampshire

Manchestor

New Jersey

Atlantic City
Bayonne
Bloomfield
Camden
Clifton
East Organge
Irvington
Jersey City
Newark
Passaic
Patterson
Trenton
Union City

New Mexico

Albuquerque

New York

Albany
Binghamton
Buffalo
New York City
New Rochelle
Niagra Falls
Rochester
Rome
Syracuse
Troy
Utica
Yonkers

North Carolina

Asheville
Charlotte
Durham
Greensboro
High Point
Raliegh
Winston Salem

Ohio

Akron
Canton
Cincinnati
Cleveland
Cleveland Heights
Columbus
Dayton
Euclid
Hamilton
Lima
Lakewood
Lorain
Parma
Springfield
Toledo
Warren
Youngstown

Oklahoma

Lawton
Oklahoma City
Tulsa

Oregon

Eugene
Portland

Pennsylvania

Allentown
Altoona
Bethlehem
Chester
Erie
Johnstown
Lancaster
Marrisburg
Philadelphia
Pittsburgh
Reading
Scranton
York

Rhode Island

Cranston
Paultucket
Providence
Warwick

South Carolina

Charleston
Columbia
Greenville

South Dakota

Sioux Falls

Tennessee

Chattanooga
Knoxville
Memphis
Nashville

Texas

Abilene
Amarillo
Austin
Beaumont
Corpus Christi
Dallas
El Paso
Ft. Worth
Galveston
Houston
Laredo
Lubbock
Oddessa
Port Arthus
San Angelo
San Antonio
Tyler
Waco
Wichita Falls

Utah

Ogden
Salt Lake City

West Virginia

Charleston
Huntington
Wheeling

Wisconsin

Green Bay
Kenosha
Madison
Milwaukee
Racine
Wauwatosa
West Allis

District of Columbia

Washington

APPENDIX B

PREDICTION EQUATIONS (BETAS): EXPENDITURE MINUS AID FOR ALL CONTROL GROUPS (1950, 1960, 1970, 1950-1960, 1960-1970)

Prediction Equations (Betas): Expenditure minus Aid for Various Control Groups, 1950.

N	Control	City Run	Reformism	Population	Employment/ Population	Percent Non-White	Income	Age	Employment	Density	R^2
285	None (all cities)	.5407 X_1	+.0009 X_2	-.0032 X_3	+.0543 X_4	-.0617 X_5	+.0870 X_6	-.1024 X_7	-.1255 X_8	+.3358 X_9	56.4%
110	City Run Schools	—	X_1 -.0189	X_2 -.0220	X_3 +.0440	X_4 -.0121	X_5 +.2900	X_6 -.2987	X_7 +.0383	X_8 +.4749	X_9 45.1%
175	Non-City Run Schools	—	X_1 +.0511	X_2 +.0756	X_3 +.1280	X_4 +.0809	X_5 +.0638	X_6 -.0155	X_7 -.3455	X_8 +.1789	X_9 23.3%
164	Reformed	.3613 X_1	—	X_2 +.0520	X_3 +.0806	X_4 -.1521	X_5 -.0702	X_6 -.1198	X_7 -.0726	X_8 +.4302	X_9 47.1%
121	Unreformed	.6948 X_1	—	X_2 +.0192	X_3 +.0340	X_4 +.0130	X_5 +.3103	X_6 -.0837	X_7 -.1105	X_8 +.2311	X_9 72.6%
48	City Run Reformed	—	X_1 —	X_2 -.0567	X_3 +.0432	X_4 -.0295	X_5 +.1300	X_6 -.4021	X_7 +.1585	X_8 +.5366	X_9 53.7%
116	Non-City Run Reformed	—	X_1 —	X_2 +.1726	X_3 +.1227	X_4 +.1033	X_5 +.0815	X_6 -.0073	X_7 -.2920	X_8 +.1721	X_9 23.4%
62	City Run Unreformed	—	X_1 —	X_2 +.0569	X_3 +.1109	X_4 -.0415	X_5 +.4349	X_6 -.1193	X_7 -.0564	X_8 +.3731	X_9 44.8%
59	Non-City Run Reformed	—	X_1 —	X_2 -.0759	X_3 +.2246	X_4 -.1963	X_5 -.1977	X_6 +.0380	X_7 -.5099	X_8 +.4633	X_9 34.8%

Prediction Equations (Betas): Change in Per Capita Expenditure minus Aid for Various Control Groups, 1960.

N	Control	City Run		Reformism		Population		Employment/ Population		Percent Non-White		Income		Age		Employment		Density		R^2
285	None (all cities)	.5083	X_1	+.0217	X_2	+.0828	X_3	+.0861	X_4	-.0385	X_5	+.0348	X_6	-.2128	X_7	+.0134	X_8	-.2186	X_9	48.9%
110	City Run Schools	—	X_1	-.0097	X_2	+.1550	X_3	+.1401	X_4	-.0569	X_5	+.1189	X_6	-.3420	X_7	+.1700	X_8	-.1366	X_9	34.7%
175	Non-City Run Schools	—	X_1	—	X_2	—	X_3	—	X_4	—	X_5	—	X_6	—	X_7	—	X_8	—	X_9	
164	Reformed	.3427	X_1	—	X_2	+.0418	X_3	+.0275	X_4	-.0182	X_5	-.1429	X_6	-.3406	X_7	-.0069	X_8	-.2814	X_9	44.3%
121	Unreformed	.6646	X_1	—	X_2	+.1440	X_3	+.1772	X_4	-.0704	X_5	+.1277	X_6	-.0234	X_7	+.0576	X_8	-.0944	X_9	53.8%
48	City Run Reformed	—	X_1	—	X_2	+.0396	X_3	+.0428	X_4	-.0096	X_5	-.0648	X_6	-.5416	X_7	+.0528	X_8	-.2876	X_9	43.5%
116	Non-City Run Reformed	—	X_1	—	X_2	+.0491	X_3	-.0503	X_4	+.1518	X_5	-.0379	X_6	-.3158	X_7	-.0707	X_8	-.3059	X_9	28.2%
62	City Run Unreformed	—	X_1	—	X_2	+.2578	X_3	+.3567	X_4	-.1314	X_5	+.1739	X_6	-.0424	X_7	+.1490	X_8	-.0074	X_9	77.9%
59	Non-City Run Reformed	—	X_1	—	X_2	+.0902	X_3	-.2717	X_4	+.0358	X_5	-.0184	X_6	-.4109	X_7	+.0653	X_8	-.0238	X_9	13.3%

Prediction Equations (Betas): Per Capita Expenditure minus Aid for Various Control Groups, 1970.

N	Control	City Run		Reformism		Population	Employment/ Population	Percent Non-White	Income	Age	Employment		Density		R^2
285	None (all cities)	.5056	X_1	-.0734	X_2	+.1012	X_3 +.0196	X_4 +.1266	X_5 +.2039	X_6 -.1417	X_7	-.0405	X_8 +.2210	X_9	49.8%
110	City Run Schools	—	X_1	-.1236	X_2	+.1110	X_3 +.0406	X_4 +.1850	X_5 +.3325	X_6 -.2729	X_7	-.0043	X_8 +.3113	X_9	32.8%
175	Non-City Run Schools	—	X_1	-.0307	X_2	+.0935	X_3 -.0127	X_4 +.1700	X_5 +.1645	X_6 -.1117	X_7	-.1040	X_8 +.2929	X_9	20.8%
164	Reformed	.4176	X_1	—	X_2	+.1179	X_3 +.0229	X_4 +.0202	X_5 -.0026	X_6 -.1524	X_7	+.0449	X_8 +.3260	X_9	43.7%
121	Unreformed	.5553	X_1	—	X_2	+.1160	X_3 +.0264	X_4 +.2180	X_5 +.3394	X_6 -.1375	X_7	-.0439	X_8 +.1677	X_9	58.8%
48	City Run Reformed	—	X_1	—	X_2	+.0649	X_3 +.0342	X_4 +.0579	X_5 -.0322	X_6 -.3866	X_7	+.0532	X_8 +.5126	X_9	42.2%
116	Non-City Run Reformed	—	X_1	—	X_2	+.2545	X_3 -.0647	X_4 +.1572	X_5 +.2295	X_6 -.1378	X_7	-.0493	X_8 +.2352	X_9	23.1%
62	City Run Unreformed	--	X_1	--	X_2	+.2094	X_3 +.1124	X_4 +.2760	X_5 +.5089	X_6 -.0198	X_7	-.0359	X_8 +.1357	X_9	40.8%
59	Non-City Run Reformed	--	X_1	--	X_2	-.0447	X_3 +.0907	X_4 +.2379	X_5 +.0982	X_6 -.1413	X_7	-.1636	X_8 +.4057	X_9	28.4%

Prediction Equations (Betas): Change in Per Capita Expenditure minus Aid for Various Control Groups, 1950-1960.

N	Control	City Run	Reformism	Population	Employment/ Population	Percent Non-White	Change in Age	Change in Income/ Employment	Change in Education	Change in Density	R^2
285	None (all cities)	.1431 X_1	+ .0642 X_2	- .0726 X_3	+ .0312 X_4	+ .1872 X_5	- .0154 X_6	+ .0829 X_7	- .0296 X_8	+ .1417 X_9	13.0%
110	City Run Schools	= X_1	- .0113 X_2	+ .3516 X_3	+ .1883 X_4	+ .2800 X_5	- .1594 X_6	+ .0276 X_7	- .1691 X_8	+ .2282 X_9	20.3%
175	Non-City Run Schools	= X_1	+ .1619 X_2	- .1939 X_3	- .0202 X_4	+ .1302 X_5	+ .0320 X_6	+ .0591 X_7	+ .0282 X_8	+ .0868 X_9	8.7%
164	Reformed	.0487 X_1	=	X_2	- .0644 X_3	+ .0290 X_4	+ .2015 X_5	- .0962 X_6	+ .0182 X_7	- .0066 X_8	+ .1314 X_9	11.1%
121	Unreformed	.2200 X_1	=	X_2	- .0912 X_3	+ .0532 X_4	+ .1349 X_5	+ .1179 X_6	+ .1391 X_7	+ .0546 X_8	+ .1172 X_9	13.9%
48	City Run Reformed	= X_1	=	X_2	+ .7645 X_3	+ .2283 X_4	+ .5179 X_5	- .4350 X_6	- .0205 X_7	- .1330 X_8	+ .2335 X_9	37.3%
116	Non-City Run Reformed	= X_1	=	X_2	- .1588 X_3	+ .0413 X_4	+ .1129 X_5	- .0700 X_6	- .0667 X_7	+ .0268 X_8	+ .0971 X_9	8.7%
62	City Run Unreformed	= X_1	=	X_2	+ .2497 X_3	+ .1557 X_4	+ .2408 X_5	+ .0225 X_6	- .0571 X_7	- .1481 X_8	+ .1483 X_9	11.2%
59	Non-City Run Reformed	= X_1	=	X_2	- .3142 X_3	- .1292 X_4	+ .1894 X_5	+ .1724 X_6	+ .3267 X_7	+ .0812 X_8	+ .1301 X_9	19.4%

Prediction Equations (Betas): Change in Per Capita Expenditure minus Aid for Various Control Groups, 1960-1970.

N	Control	City Run	Reformism	Population	Employment / Population	Percent Non-White	Income	Age	Employment	Density	R^2
285	None (all cities)	.1644 X_1	- .0005 X_2	- .1250 X_3	- .1360 X_4	+ .0229 X_5	+ .3580 X_6	+ .1115 X_7	- .0508 X_8	+ .1935 X_9	15.7
110	City-Run Schools	X_1	+ .1472 X_2	- .0795 X_3	- .1830 X_4	+ .0868 X_5	+ .5793 X_6	+ .1181 X_7	- .0748 X_8	+ .1394 X_9	27.7%
175	Non-City-Run Schools	X_1	- .1517 X_2	- .1202 X_3	- .1362 X_4	+ .0200 X_5	+ .1138 X_6	+ .1802 X_7	- .0299 X_8	+ .1785 X_9	9.2%
164	Reformed	.2195 X_1		- X_2	- .1890 X_3	- .1493 X_4	- .0024 X_5	+ .1172 X_6	+ .2119 X_7	- .0084 X_8	+ .1905 X_9	16.7%
121	Unreformed	-.0650 X_1		- X_2	- .0224 X_3	- .1419 X_4	+ .0349 X_5	+ .4982 X_6	+ .0806 X_7	- .1027 X_8	+ .1734 X_9	23.6%
48	City-Run-Reformed	X_1		- X_2	- .3113 X_3	- .1578 X_4	- .0390 X_5	+ .2805 X_6	+ .3211 X_7	- .0616 X_8	+ .1359 X_9	31.2%
116	Non-City-Run Reformed	X_1		- X_2	- .1734 X_3	- .1386 X_4	+ .0116 X_5	+ .1482 X_6	+ .1618 X_7	- .0288 X_8	+ .2313 X_9	10.8%
62	City-Run Unreformed	X_1		- X_2	+ .0816 X_3	- .2149 X_4	+ .0968 X_5	+ .5812 X_6	+ .0621 X_7	- .1695 X_8	+ .2405 X_9	36.7%
59	Non-City-Run Reformed	X_1		- X_2	- .0466 X_3	- .2466 X_4	+ .0485 X_5	+ .0845 X_6	+ .0791 X_7	- .0173 X_8	+ .0467 X_9	8.1%