

**CHANGING INPUTS TO URBAN PUBLIC ADMINISTRATION
AND THE PROGRESSIVE REFORMERS**

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I wish to express my gratitude to my advisor, Dr. John Modell, and to my friends and family. Without their assistance and encouragement, I would not have completed this project. I now suspect that the only people more foolish than one who tries to "go it alone" are those who believe that individuals actually do so and succeed.

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INTRODUCTION

One area of interest to urban historians, or to students of urban society more generally, is the problem of how to agree upon and then deliver urban services to the community at an acceptable level. Such a dilemma apparently exists because of the side effects or "externalities" of the urbanization process. Put another way, negative effects, such as increased crowding and waste accumulation, presumably accompany the growth of an urban area and demand public action through service provision.¹ This paper attempts to contribute to the isolation and understanding of the factors or processes which are of importance to the urban services problem.

In his recent work on Baltimore, Alan D. Anderson makes suggestions on how one ought to go about studying the urban services problem.² First, he points out that such a study should examine all aspects of the urban system, rather than choose some few variables. In addition, it should avoid the pattern of the aggregate study, which is only descriptive, and has no explanatory power concerning cities. Out of his research on early 1900s Baltimore, Anderson essentially arrives at an explanatory model which could be described as economic determinism. He claims that the choice of types and levels of urban services is a product of the interaction of the city's spatial patterns and the changing service technology. And in the case of Baltimore, he further suggests that this interaction led to a "crisis" in urban service provision in the first few decades of this century.

But it appears that Anderson's own model suffers from one of the problems that he

¹The basic urban services so necessitated would commonly fall into such categories as protection to persons and property, water supply and sanitation, transportation, education, and parks and recreation.

²Alan D. Anderson. *THE ORIGIN AND RESOLUTION OF AN URBAN CRISIS: BALTIMORE, 1890-1930*. Baltimore: Johns Hopkins University Press, 1977. p. 2.

warns against. He appears to improperly narrow the range of variables to be considered in the urban services decision. In particular, Anderson simply assumes that services are, in the end, determined by supply and demand, and not by political decision makers. This assumption leads to an oversimplification of the issues. For example, while new transportation technology might change a city's spatial patterns, thus changing its need for services, Anderson ignores the significant role of political decisions in providing transportation (e.g. the choices involved in road construction or in the supply of mass transit). But while Anderson is avoiding such complications in constructing his model, he does appear to admit the need for consideration of other factors. In particular, he seems to recognize the importance of urban management, when he cites the lack of long range planning as particularly damaging to such management.³

Studies of the urban services problem may be tending to shy away from the political factor, as does Anderson. A recent review by Terrence J. McDonald claims that such an oversight is a result of urban history's foundation in the larger field of social history. He suggests that, as social history was originally defined as "not political" history, urban history will also tend to ignore the factor of urban politics.⁴ I propose in this case, as McDonald suggests, that the political factor is important. In particular, I suggest that the availability of urban public administration, one of many politically determined factors, is of great importance to urban services provision.

Public administration is that area of government which provides the planning and management functions that are essential to the supply of urban services. The study of public administration should serve, in part, as a compromise between extreme views on

³Ibid, p. 30.

⁴Terrence J. McDonald. "Comment", JOURNAL OF URBAN HISTORY. Vol. 8, No. 4, August 1982. pp. 454-462.

what should be considered relevant to the services problem. On the one hand, public administration is a supposedly bureaucratic function, which should respond to the demands of the environment, as suggested by Anderson. But public administration is also, to some significant degree, a product of the political process, and therefore represents some of the political factors to be considered.

I will concern myself with the study of "inputs" to public administration in American cities. This terminology, which will appear repeatedly, will be defined very broadly as the sum of all resources devoted to the management of urban services provision. One immediate problem is obvious, in that a great variety of measures for such inputs are imaginable. I will concentrate on public administration inputs as measured by levels of manpower. (Alternatively, outputs of public administration might be measured, for example, by gaging the effectiveness of a program managed by a given type of administrator. Clearly, measurement of outputs would be a significantly more difficult task.)

Another obvious consideration in examining public administration is the choice of a relevant period of study. I have chosen to study the 1910s and 1920s, a period coinciding with that considered most important by Anderson. However, I do not suggest a "crisis" in public administration during this period. (Such a claim would suggest a political judgement of the current state of economically determined administrative inputs.⁵ I intend, instead, to retain the political as an additional set of potential factors determining such inputs.) I am proposing that this was a period of rapid and significant change in the inputs to urban public administration which cannot be clearly explained in linear, evolutionary terms. Study of public administration during this period might help discover the determinants of inputs to public administration, and provide some information on the effects these determinants have

⁵See John Modell's review of Anderson's work in THE AMERICAN HISTORICAL REVIEW. Vol. 83, Dec. 1978, p. 1353.

on public administration, and therefore on the public services problem in general.

THE NEED FOR STUDY OF URBAN PUBLIC ADMINISTRATION

A brief sampling of the literature concerning urban public administration will support the contention that this is a promising area of study, and will provide some framework for study as well. A provocative view of the subject appears in Brian J. L. Berry and John D. Kasarda's recent test of McKenzie's ecological theory of urban expansion. Using data on American cities in 1960, the authors confirmed the theory that increasing concentration of administrative functions occurs within the central city as the suburban ring and the overall metropolitan area expand and grow.⁶ But their essay's tabular presentation of data, allowing comparison of urban public administration with the six other, private types of administration studied (e.g. financial administration, or private management) suggests an interesting possibility. The standard deviation which is evident in the number of public administrators per 1000 population in central cities is relatively much greater than that for all other types of administration studied.⁷ The authors fail to comment on this variation, but the implication is that public administration is NOT simply another type of bureaucratic administration, like business administration, and that it is NOT consistently driven by the economic environment as some would suggest. Therefore, we can expect to find significant variations in the level of public administration resources employed. An examination of these variations may be valuable to study of any area, such as the service problem, which may be effected by public

⁶Brian J. L. Berry and John D. Kasarda, CONTEMPORARY URBAN ECOLOGY. New York: Macmillan Publishing Co., Inc., 1977. Chapter 10. The authors measured administration as manpower concentration in relation to the area's population, much as I intend to do.

⁷Ibid., p. 201

administration.

More historical views of public administration reinforce this expectation of variation. Past studies of the subject have tended to focus on inputs to public administration, rather than on its outputs. Further, the study of inputs to public administration has generally concentrated on the relative expenditures in relevant functional areas, such as "general government", in public financial statements. Yet even such oblique measures still support the hypothesis of variations in public administration. More specifically, two such studies suggest that distinctive variations in urban public administration may have occurred in the early 1900s.

First, Kenneth Fox's recent work on city government demonstrates a significant increase in general government expenditures between 1904 and 1912, an increase that was shared by some other functional areas. But from 1912 to 1930, he finds that per capita expenditures on local public administration, as measured in "general government", showed only an 8% real increase, while expenditures in all other functional areas of government increased by at least 25%, and often by much more.⁸

A recent budget study of public expenditures displays a similar finding. This latter study examines aggregate government spending at all levels, by function. However, urban government was still responsible for a sufficient proportion of government expenditures, relative to state and federal government in the early 1900s, to allow for useful conclusions from this data. Again, "general government" expenditures display an unusual trend. As a percentage of civilian government expenditures, they decreased significantly, from about

⁸While the "highways" expenditure increase for 1912 to 1930 was also low, Fox points out that this is clearly the result of the introduction of state and federal road construction programs, and thus is artificially low. Kenneth Fox, *BETTER CITY GOVERNMENT: INNOVATION IN AMERICAN POLITICS, 1850-1937*. Philadelphia: Temple University Press, 1977. pp. 101, 102.

15% in 1902 to a roughly constant level not exceeding 6% from 1923 to 1950.⁹ Both sources again fail to investigate this apparent variation in public administration inputs. Fox, for example, simply proposes that modernization of administrative practices resulted in no further need for increasing per capita expenditures on general government.¹⁰ But this combination of studies clearly demonstrates that there was an unusual and interesting variation in inputs to public administration during the early 1900s. During this period, for reasons that bear investigation, public administration was treated differently from other aspects of urban government.

Study of the period between 1910 and 1930 seems reasonable, based on the findings cited above. In addition, other trends underway at the time suggest that there were significant potential sources of strain on urban public administration, making study even more important. First, the field of public administration was undergoing radical change, as administrative structure moved toward a bureaucratic style of centralized and departmentalized organization, much like that of business. The common assumption is that such change was a response to the new environment of more complex services.¹¹ Whether there was such a change in complexity or not, overall demand for services may have been at its height during this period, as Anderson generally places the peak demand for cities' capital projects in the 1920s.¹² Finally, there was an increase in the potential for local administrative difficulties due to suburbanization: a greater and greater proportion of the population would live in the suburbs of American cities after annexation virtually stopped in

⁹Richard A. Musgrave and Peggy B. Musgrave, *PUBLIC FINANCE IN THEORY AND PRACTICE*. 2nd ed.; New York: McGraw-Hill Book Co., 1976, p. 137.

¹⁰Kenneth Fox, *BETTER CITY GOVERNMENT*. p. 102.

¹¹Alan D. Anderson, *THE ORIGIN AND RESOLUTION OF AN URBAN CRISIS*. pp. 29, 31.

¹²*Ibid.*, p. 46.

the 1920s.¹³ More convincing evidence of such potential difficulties appears in the calls for administrative reorganization heard from members of the consolidation movement¹⁴, who claimed that our metropolitan areas would soon become unmanageable. This movement reached its peak in the late 1920s. The clear change in the inputs to urban public administration, combined with the potential strains on the capabilities of public administration, suggests that urban public administration might well be an important variable in the provision of urban public services, at least during this period.

METHOD OF STUDY

In designing a study of urban public administration during this period, I will attempt to address Alan Anderson's challenges in the area of methodology. First, I do not propose that public administration is the only variable of relevance to the public services problem. I do suggest, however, that it is a particularly important variable, as management and planning are vital to the success of any organization, and will examine this variable in detail. Ultimately, I hope to contribute to the study of the services problem by demonstrating how public administration might change, and in turn, effect a change in public services.

I intend to avoid the purely aggregate and non-explanatory study by presenting my research in two stages. First, I will engage in an aggregate statistical study of a small and arguably non-random sample of American cities. I wish to disavow, at this point, any notion that such a small sample is expected to produce results which pass the formal tests of

¹³Jon C. Teaford, *CITY AND SUBURB*. Baltimore: Johns Hopkins University Press, 1979. pp. 76, 77.

¹⁴Participants in this movement advocated the consolidation of the numerous and varied governments in a metropolitan area, such as cities, townships and special districts, into a single and presumably more manageable regional urban government.

statistical significance. This sample will, however, provide conclusions which offer suggestions for further research. My aim is to discover plausible relationships between inputs to urban public administration and the variables that might effect it. The second stage of my report, a case study of Pittsburgh, will involve the specific test of a hypothesized relationship between public administration and an independent "politics" variable, the presence of a political reform movement. This use of a case study will, I hope, demonstrate how a causal relationship to changes in urban public administration might exist. In addition, the use of a case study should verify the basic descriptive findings on changing urban public administration through use of different types of data.

Data for the statistical portion of this study comes, generally, from the United States Census. Expecially useful have been the Census of Population of 1910, 1920 and 1930 (including information from the overall census of population, and from the census of occupations), and the Bureau of the Census' Financial Statistics of Cities. Conveniently, the Bureau of the Census retained its format of data gathering and presentation almost unchanged for the three decades of use here.

The case study of Pittsburgh will be based heavily on information from the annual executive department reports from that city. (In particular, the occasionally revealing narratives that appear in such reports were of use.) This will be supplemented by information from a variety of sources, including narrative histories, biographical sketches, and dissertations on the local government and politics of the Pittsburgh area. The result will be a brief time series of administrative inputs into Pittsburgh government. This will be accompanied by an account of the characteristics of the political administrations which were in place at the time, which will help explain what factors contributed to changes in public administration in that city.

SELECTING THE CITY-SAMPLE GROUP

Two issues are of importance in selecting a group of cities for statistical analysis. First, the cities should be responding to roughly the same environment. This helps ensure that public administration is encountering similar demands in each city. The second criterion is that the sample allows for relatively simple data gathering and analysis procedures.

To satisfy the second criterion, cities having a population of 100,000 or more in 1910 were chosen.¹⁵ This resulted in a manageable number of cities for an initial study of the question. In addition, the population cutoff represents the lower limit of data availability for some of the variables found in the United States Census. At this point, New York City was eliminated from the sample group, for it was clearly an order larger than any other city in the sample, and because its multiple borough government would present significant problems in the comparability of public administrations.

The criterion of like environment was addressed by use of a simplifying calculation much like one of the techniques used by John Borchert in his classification of cities.¹⁶ Cities which had reached less than 60% of their 1960 central city population by the year 1910 were eliminated. (Baltimore, at a fraction of one per cent below 60%, was retained as the lower limit.) This step eliminated all of the relatively younger western and southern American

¹⁵Central city population was used, rather than some indicator of metropolitan area population. SMSA population would be difficult to acquire for such an early date. In addition, central city population seems more relevant, as this study focuses most heavily on city administration.

¹⁶John R. Borchert, "American Metropolitan Evolution", *GEOGRAPHICAL REVIEW*. No. 57, 1967. pp. 301-332.

cities which, facing different environments, had notably different growth patterns. It also, conveniently, eliminated Washington, D. C., which would again present problems due to its unusual administrative structure.

The result of this selection procedure is a sample of 25 cities, with 15 of the 25 having a population of over 200,000 in 1910, and the remaining 10 falling between 100,000 and 200,000. (For a list of the selected cities, see Appendix I.) The selected cities are, in general, the older, northeastern industrial cities of the United States. These cities had experienced their greatest growth in roughly the same periods, and were of roughly the same functional type. Thus, their environments have presented similar problems for public administrators during the period under study. (Some of the sample, such as twin cities, suggest the problem of less than independent public administration, but data collected on these cities demonstrates that they did, in fact, operate in a clearly independent manner.)

TRENDS IN URBAN PUBLIC ADMINISTRATION: 1910 TO 1930

A clearly bureaucratic form of government had appeared in major American cities by the second quarter of the twentieth century.¹⁷ One might expect such a change to result in increasingly standardized means of determining appropriate levels of staffing for the city administration. These expected common levels of administrative staffing, at least in comparable types of cities, would presumably have been the culmination of a trend of increasingly similar administrative inputs throughout the preceding decades, as city governments converged from their varied forms of administration toward a standardized organization. Such a trend in inputs to public administration could be expected to exist

¹⁷Alan D. Anderson. THE ORIGIN AND RESOLUTION OF AN URBAN CRISIS: BALTIMORE, 1890-1930. p. 31.

during the two decades of concern to this study. I have chosen to test this hypothesis by analyzing the "concentrations" of public administrators among the cities of the sample group, in 1910, 1920 and 1930.

To represent administrators, I have used the number of government "officials and inspectors" located within each city, as presented in the United States Census statistics on occupations. Concentrations were then calculated using the central city's census population. (Personnel concentrations were chosen, rather than other possible measures of inputs such as expenditures on administrative personnel, on the assumption that this measure is more likely to reflect actual resources expended on urban services, than would less direct measures.) This indicator of the number of administrators per 100,000 population allows a simple comparison of administrative inputs at the city level, and at the county level within the city, across cities in the sample. (See figures on actual concentrations of administrators, in the sample cities, in Appendix I.)

An examination of city officials and inspectors over the two decades demonstrates that the pattern of administrative staffing levels does not emerge as hypothesized. One might expect an increasingly similar concentration of administrators across cities in the sample. Such a change could be the result of an economic, political or organizational imperative. However, this expectation is not met. The mean concentration of officials and inspectors first declined from 1910 to 1920, and then returned to its previous level by 1930.¹⁸

¹⁸Of the 25 cities in the sample, 10 followed precisely this trend. And another two cities, Cincinnati and Cleveland exhibit the same decreasing and then increasing concentration when one looks at the total city and county administrators in each year.

Concentration of City Officials

	Mean	Standard Deviation
1910	61.8	14.1
1920	56.1	14.1
1930	61.9	15.0

The median concentration suggests that this was more clearly a decreasing trend in administrative inputs for most of the cities, with a smaller group of more heavily staffed cities being responsible for the return to the earlier average (hence the higher standard deviation in 1930). These statistics indicate that there was actually, if anything, a divergence in the inputs to public administration, and not a convergence during this period. (The noticeable increase in the standard deviation in the number of city officials and inspectors supports this conclusion.)

An additional possibility of relevance to the examination of urban public administration is that county government, to a great degree, is also involved in, and will therefore respond to the problem of provision of central city services.¹⁹ The trend in the combined levels of city plus county administrators within each city adds an interesting dimension. The mean concentration again shows a decrease from 1910 to 1920 (suggesting that county staffing levels remained roughly constant). But it rises, in 1930, to a level clearly higher than its initial level in 1910.

¹⁹While the modern urban place has expanded into the surrounding county and beyond, the city's boundaries have remained stationary since the early 1900s. Thus, the county has evolved into an alternative provider of urban services.

Concentration of City Plus County Officials

	Mean	Standard Deviation
1910	68.1	14.6
1920	63.2	15.6
1930	74.2	17.4

And again, the median concentration for this combination of administrators, as well as the increasing standard deviation, suggests that the sample group is displaying an actual divergence in staffing levels, possibly splitting into two somewhat distinct groups.

The data on concentrations of public administrators, as indicated by "officials and inspectors", traces a clear trend of decreasing inputs from 1910 to 1920, followed by a restoration of inputs in 1930. This is supplemented by an increase in county administrators, with the result that overall local administrative inputs do increase over the two decade period. The latter trend is plausible, given the general shift toward increased functions at the county government level.²⁰

An unusual and unexpected decrease in inputs to local public administration occurred around 1920, then. One might dispute such a claim by suggesting that the trend was shared by indicators of inputs to government in general, thus showing that public administration is not an interesting variable during this period. For example, there might have been a general cut in inputs to government approaching 1920 because of World War I. Or there might have been an overall decrease in per capita inputs to government which was reversed by an early

²⁰Jon C. Teaford, *CITY AND SUBURB*. pp. 81-82. One additional point is that the standard deviation of the concentration of county administrators alone, relative to the mean, traces a different pattern than do the above statistics. While it initially does increase significantly, it returns to its previous level by 1930, suggesting a somewhat more regular pattern of increasing county administration throughout the sample.

government response to the Depression. To check such a hypothesis, I created a statistic which should reflect the trend in non-administrative inputs as measured by the number of public service workers.²¹ While the increase in the concentration of public service workers lags behind a strictly linear trend in 1920, the mean for this statistic does trace a fairly steady rise in non-administrative inputs.

Concentration of City Workers

	Mean	Standard Deviation
1910	439.2	95.2
1920	490.9	116.0
1930	594.9	129.0

In addition, the median and standard deviation, being fairly consistent, suggest a more regular pattern of public service worker staffing throughout the period. Through comparison with the service worker statistic, it becomes clear that the temporary decrease in inputs to public administration, as well as the apparent divergence of the level of inputs among cities, traces a trend which is peculiar to this particular classification of government activities.

CHOICE OF INDEPENDENT VARIABLES

Past studies of public services suggest a number of possible explanatory models for

²¹Data was again taken from the United States Census information on occupations. The statistic is equal to the sum of the number of "Firemen", "Laborers-Public Service" and "Policemen". It does not, for example, include county sheriffs, although it might include such categories as county road workers.

the level of inputs. Terrence McDonald recently proposed what is probably one of the most complete systems, suggesting three models for the development of the urban public sector.²² First, he offers the "socio-economic theory", which suggests explanations based on economic factors which would encourage, or promote the demand for public services. These factors would typically include such things as population, proportion of the population which is foreign born, and predominance of manufacturing in a city. His second model, "political-cultural theory", considers the political factors underlying urban service choices. And finally, "bureaucratic-incremental theory" offers explanations which are essentially based on budgetary mechanisms. (This last model focuses on the explanation of change resulting from budgetary incrementalism, a theory which suggests that relatively uniform, incremental changes, rather than actual policy decisions, determine the inputs to government services.) I have used these three broad categories in an attempt to create a model which will explain the discovered changes in inputs to urban public administration. Some modifications in specific variables have been necessary, however.

Variables in the first category (socio-economic) are fairly straightforward. I have chosen (1) population and (2) percent foreign-born as the most promising variables, since a recent article by M. Craig Brown and Charles N. Halaby suggests that these two are the most powerful factors in explaining expenditures in a sample of thirty large cities in the United States between 1890 and 1940.²³ Both variables are assumed to be positively related to changing inputs to public administration, as they should reflect the need or demand for

²²Terrence J. McDonald, "The Parameters of Politics and Fiscal Policy in the Developing American City: Socio-Economic Change, Political Culture and Incrementalism in San Francisco, 1860-1906," in *THE POLITICS OF URBAN FINANCE: STABILITY AND CHANGE IN AMERICAN CITIES, 1860 TO THE PRESENT*, ed. by Terrence J. McDonald and Sally K. Ward. Beverly Hills, Calif.: Sage Publications, forthcoming, 1984.

²³M. Craig Brown and Charles N. Halaby, "City Bosses, Structural Reform, and the Socio-Economic Bases of Urban Fiscal Politics: Expenditures in Thirty Cities, 1890 -1940," in *THE POLITICS OF URBAN FINANCE: STABILITY AND CHANGE IN AMERICAN CITIES, 1860 TO THE PRESENT*, ed. by Terrence J. McDonald and Sally K. Ward. Beverly Hills, Calif.: Sage Publications, forthcoming, 1984.

services. My model includes central city population at the beginning of the relevant decades (i.e. 1910 and 1920), assuming that city size should indicate the need for services, and therefore for public administration during the coming decade. I have also included the percentage change in population over each decade, on the assumption that city growth would present a demand for services, as distinct from that associated with city size. Finally, I have considered the proportion of the population who were foreign-born, at the beginning of each decade as well, again assuming that a larger foreign-born population would need more city services, and therefore more public administration. I did not, however, consider percentage changes in this variable because, in both decades, each city's proportion who were foreign-born decreased in like measure.

Political factors in the early 1900s appear to comprise the political machines, operating a "spoils" system of government and basing their power in the ethnic communities (or lower classes), opposed by the reformers, who emphasized "business-like" government to suit their generally middle-class interests. Why should we assume that this political dichotomy is the relevant factor in the specific question of inputs to public administration, however? Martin J. Schiesl suggests that, while progressive reform was concerned with social welfare, the movement was, in the end, dominated by demands for government economy.²⁴ In addition, the movement's research groups chose public administration as the area of government most in need of attention.²⁵ Such a focus is understandable, given this middle-class movement's concern with patronage positions in bureaucracy given out by the lower-class-dominated machines. One might therefore expect that such an efficiency-oriented movement, in focusing on public administration, might take

²⁴Martin J. Schiesl, *THE POLITICS OF EFFICIENCY: MUNICIPAL ADMINISTRATION AND REFORM IN AMERICA, 1800-1920*. Berkeley: University of California Press, 1977. pp. 169,170.

²⁵*Ibid.*, p. 117.

actions which would result in decreased inputs to public administration.

In order to employ the machine-reform factor as a variable, it is necessary to find some means of quantifying the presence of reform. I have used a scheme suggested by the work of Robert L. Lineberry and Edmund P. Fowler.²⁶ Lineberry and Fowler assigned an increasing numerical value with the presence of each significant change in government sought by the reformers. These changes included (1) the city manager or commission form of government, (2) non-partisan elections and (3) at-large election of city councilmen. I have used a simplified version of this scheme, using the data available in the Bureau of the Census' "Special Reports" which, during this era, occasionally published tables on the presence of these institutions in city governments.²⁷ Data from 1912, 1915, 1917 and 1923 will give me the ability to consider both reform's varying strength from city to city, relative to the machines in place, and the timing of the reform movement among these cities, rather than just its presence or absence. (See Appendix II for the resulting table of values of the reform variable.)

Finally, the bureaucratic-incremental category of variables suggests fairly simple logic, and yet results in a complex set of specific variables for consideration. One normally uses this theory to explain steady-state services through incremental change in city budgets. However, I have assumed that to explain unusual changes in public administration, one must look to unusual budgetary trends. Specifically, I have assumed that reductions in

²⁶Robert L. Lineberry and Edmund P. Fowler, "Reformism and Public Policies in American Cities", *AMERICAN POLITICAL SCIENCE REVIEW*. Vol. 61, Sept. 1967. pp. 701-716.

²⁷Operationally, I assigned the value 0 to cities with less than 1/6 of their councilmen elected at large, 1 to cities where 1/6 to 5/6 of the councilmen were elected at large, and 2 to cities with more than 5/6 elected at large. Finally, cities with commission governments were given a value of 3. No city manager governments appeared within my sample during this period. The final assignment, I should note, simply assumes that commission government was the most extreme result of the reform movement. In the following text and tables, I will refer to levels 0 through 3 of the reform variable as "No Reform", "Partial At-Large", "At-Large Council" and "Commission Government" respectively.

the number of administrators, or in overall public services, would come as a negative response to unusual and unacceptable increases in public expenditures. My model uses per capita total expenditures of cities. In addition, I consider per capita expenditures on "General Government", to represent city expenditures on administration. These two variables should help test assumptions on just how the polity concerns itself with the total government burden, and with specific expenditures of its tax dollars.

I have computed these figures so as to measure (1) absolute levels of expenditures, (2) absolute changes in expenditures and (3) percentage changes in expenditures. These permutations of the expenditure variables should help test the possible focus of the polity's perception of expenditures, which could be on the aggregate level of the government spending, or on some measure of relative changes in that burden. Finally, I employ figures on these expenditures from 1905 to 1927, at various intervals ranging from three to eight years. This allows consideration of the possible focus of attention on more or less recent expenditures, and on shorter or longer-term changes. The overall assumption here is that of a negative relationship between inputs to public administration and levels of and changes in expenditures in the recent past. In addition, there might also be a similar relationship between these inputs and specific spending patterns on administrative functions.

ANALYSIS OF THE STATISTICAL MODEL

In analyzing the statistical data collected, simple tabular comparisons of variables proved to be the best indicators of relationships. Attempts at some more "powerful" techniques, such as regression analysis, produced only doubtful results, due to the difficulty of interpretation of relatively weak relationships in a sample of this sort. Therefore, I have

concentrated on the tabular analysis of categorical variables.²⁸ I have also used multiple regression at times, based on the variables suggested as most promising by the tabular analysis, to provide possible quantification of patterns of relationships. The following text will emphasize seemingly non-random relationships, and speak less frequently of negative findings.

One general comment, concerning my analysis, is that the socio-economic variables are surprisingly ineffective in explaining the administrative changes of this period. It is the political, and to an even greater extent, the budgetary variables which offer some insight. Thus, my analysis, while attempting to explain a particular phenomenon, also offers fairly strong evidence in refutation of the socio-economic models of urban public services.

The 1910s

I will begin with what is chronologically the first, and probably the most interesting question. That is, what variables might potentially explain the decrease in the number of city administrators seen in the 1910s? I have operationalized this dependent variable as a lower than average (i.e. more sharply negative) percentage change in the concentration of city administrators between 1910 and 1920. (Logic dictates that I consider only variables describing the phenomena before 1920 as possible causes of this trend.)

Among the socio-economic variables, the percentage of the population who were foreign-born apparently had no impact on the percentage change in city administrators in the 1910s. There is a clear relationship, however, between city population in 1910 and the

²⁸The analysis was carried out by dichotomizing the variables, that is converting them into zeros and ones, depending on whether the particular value was higher or lower, respectively, than the average value for that variable.

dependent variable. As the table below illustrates, there was a tendency toward larger cuts, or toward sharper declines in administrative concentration with larger than average city size.

TABLE OF % Change in Conc. of City Administrators, 1910 to 20
BY Central City Population in 1910

POPULATION	ADMINISTRATION	
	Lower	Higher
Lower	6	11
Higher	6	2

Some might claim that such a relationship reflects the expected demand model of city services.²⁹ Following this rule, any demand-related change in staffing levels of cities, given their size, would mean a smaller percentage change in inputs for larger cities. However, there must be significant doubt of such a demand-based model in this case of cuts in service, as cuts in administration should also be smaller for larger cities. The more negative percentage change in larger cities seen here does not match this expectation of smaller cuts. Thus, the demand-based model does not offer a reasonable explanation. And overall, the socio-economic model does not appear to be useful in explaining the pattern of decreasing concentration in city administrators in the 1910s. (This model cannot, however, be discarded, as it will offer some partial explanation of the trends seen in the 1920s.)

A political model does offer some explanation of this trend, however. Its results are clearest when looking at the reform movement at its peak (which is essentially measured by the reform variable for the year 1917). Tabular comparison shows a somewhat lower percentage change in the concentration of city administrators in the 1910s, in both the

²⁹This model suggests that, as city size increases, the inputs into administration will demonstrate a proportionally smaller increase. Presumably, this theory is suggesting that economies of scale would exist. It clearly suggests, however, that such inputs will be related, in some reasonable way, to demand for services by the public.

Partial At-Large and At-Large Council groups under the reform variable. This becomes a clearly higher percentage change, however, in the Commission Government cities.

TABLE OF % Change in Conc. of City Administrators, 1910 to 20
BY Reform Measure in 1917

REFORM	ADMINISTRATION	
	Lower	Higher
No Reform	7	5
Partial At-Large	2	1
At-Large Council	3	1
Commission Gov't.	0	6

The implication is that cities which adopted reforms such as the at-large council were likely to engage in somewhat larger administrative cuts, while those which adopted the reform of commission government would clearly engage in smaller administrative reductions.

Considering the reform variable as a dichotomy between the Partial At-Large and At-Large Council cities, and the Commission Government cities makes sense when one recognizes that there were clear differences between the economy-minded reformers and the social reformers.³⁰ (My analysis assumes that these different versions of reform are adequately differentiated by the comparison of cities choosing varying proportions of at-large council members and those choosing commission government.) Such a recognition of the characteristics of reform groups allows the conclusion that the presence of economy-oriented reform resulted in a greater percentage decrease in the concentration of city administrators during the 1910s.

³⁰For example, Schiesl points out that, while some reformers did campaign for social change, others clearly saw reform simply as a means of social control. Martin J. Schiesl, *THE POLITICS OF EFFICIENCY*. pp. 118, 119.

Any doubt about the dichotomy among reformers, or that such a dichotomy is properly represented by this model, should be allayed by a comparison of the expenditure patterns of cities in these two groups. First, the two movements appeared under different fiscal circumstances. The Economy Reform³¹ governments first appeared around 1910, in cities with above average total expenditures.

TABLE OF 1911 Total Expenditure Level
BY Reform Measure in 1912

REFORM	TOTAL EXPENDITURES	
	Lower	Higher
No Reform	11	5
Partial At-Large	2	4
At-Large Council	1	2

However, when three Commission Governments had appeared in the sample of 1915, all three were in cities with below average spending. (Of these three cities, only St. Paul had previously demonstrated any tendency toward reform, being ranked as a "Partial At-Large" city in 1912. Thus, the Commission Government cities were probably not simply an outgrowth of the earlier group of reform cities.) The difference is clear in the Total Expenditure measure.

TABLE OF 1915 Total Expenditure Level
BY Reform Measure in 1915

REFORM	TOTAL EXPENDITURES	
	Lower	Higher
No Reform	6	8

³¹ I will use the term "Economy Reform" from here on to denote those cities having either a "Partial At-Large" or "At-Large Council" government.

Partial At-Large	2	2
At-Large Council	2	2
Commission Gov't.	3	0

In the case of both movements, administrative expenditures yielded virtually the same results. Economy Reform appeared in cities with above-average administrative expenditures, while Commission Government appeared in cities with below average administrative expenditures. Such a finding suggests differing motivations in these groups' appearances. While the Economy Reformers presumably were reacting to increased spending levels, the Commission Government reformers may have appeared in response to a different set of perceived problems, such as social welfare needs. (One might, however, express even this in budgetary terms, as an unacceptably low public expenditure level.)

The two movements also exhibited differing trends in expenditures, after their appearance. By the early 1920s, Commission Government cities tended toward above-average total spending, while the Economy Reform cities' total spending returned to the No Reform cities' average.

TABLE OF 1923 Total Expenditure Level
BY Reform Measure in 1923

REFORM	TOTAL EXPENDITURES	
	Lower	Higher
No Reform	9	6
Partial At-Large	1	1
At-Large Council	2	1
Commission Gov't.	0	5

Unlike total expenditures, in this regard, administrative expenditures remained above

average for all levels of the reform variable. Overall, however, it seems clear that the Economy Reform and Commission Government groups were quite different. Economy Reform appeared in conjunction with higher levels of spending, and reduced these, while Commission Government appeared in conjunction with lower level of city spending, and brought spending increases.

In summary, the political variable of reform, in the 1910s, offers an explanation of administrative change only after one recognizes the inherent sub-groups among reformers. Once these are differentiated, it is clear that the presence of Economy Reform (as characterized by at-large city council members) was associated with greater cuts in the number of city administrators.

Finally, the set of budgetary variables also suggests an explanatory relationship, indeed, a strong one. A greater percentage decrease in the concentration of city administrators in the 1910s was associated with higher prior levels of both total and administrative expenditures, seen in 1905 and in 1908. This relationship is well represented by administrative expenditures in 1908.

TABLE OF % Change in Conc. of City Administrators, 1910 to 20
BY 1908 Administrative Expenditure Level

EXPENDITURES	ADMINISTRATION	
	Lower	Higher
Lower	4	9
Higher	8	4

In addition, such cuts in administration staffing can be related to a higher than average absolute change in administrative expenditures between 1905 and 1908.

TABLE OF % Change in Conc. of City Administrators, 1910 to 20
BY Absolute Change in Admin. Expenditures, 1905 to 1908

ADMINISTRATION		
EXPENDITURES	Lower	Higher
Lower	6	11
Higher	6	2

(In the years following 1908, measures in changes of both indicators of expenditures seem to have mirrored the changing concentrations of administrators over the period. Presumably, such expenditure trends would be a reflection of, rather than a cause of administration and service changes.)

Overall, the budgetary indicators support the theory of a polity reacting negatively to high spending. It is plausible that voters selected a new government which would reduce expenditures, in response to what they perceived as rapid and large increases in total and administrative expenditures, between 1905 and 1908. The data suggests the possibility of a long time horizon (with results lagging expenditure changes by as much as a decade). It suggests a budgeting focus on total expenditure levels, and on absolute changes in expenditure (particularly those absolute changes which occurred over the short term). And finally, this analysis supports the idea that the polity in the cities sampled did react to spending in specific areas of government (i.e. administrative expenditures), not merely to overall government spending. Such negative reactions are clearly a possible cause of changing inputs to city administration in the 1910s.

I attempted multiple regression analyses to explain changing public administration inputs in the 1910s, using the variables which tabular analysis suggested as most promising. In order to incorporate my assumptions about the differing groups among the reformers, I recoded the reform indicator at its peak (1917) to give the value of 0 to Commission

Government cities. This seems reasonable, as this group of social reformers appears to have treated inputs to government in a manner more similar to No Reform governments than to the Economy Reformers. (Recall that they tended toward above-average expenditures, clearly diverging from the decreasing expenditure trends of the Economy Reform cities.) The other variables were used in their original form, not as dichotomized variables.

The most promising regression found explains the cuts in administrative inputs during the 1910s by (1) the presence of Economy Reform government and (2) large absolute increases in administrative expenditures between 1905 and 1908, their effect being additive. (See statistical output in Appendix II.) With an R squared adjusted of 16.8 percent, and with ratios of coefficient to standard deviation which both suggest significance of the variables at a .95 confidence interval, this regression lends some real support to the simultaneous explanatory power of the political and budgetary variables. (The many observations with large influence on the regression continue to underscore the weakness of the small sample, however.)

In conclusion, this, and the preceding tabular analyses support the hypothesis that city administration reductions in the 1910s were related to the presence of the Economy Reform movement, and to overall expenditure trends which could provoke a negative reaction. The changes were also quite likely related to particular expenditure trends in the specific area of concern: public administration. A note of caution is necessary, however, in that the strength of this conclusion may be exaggerated by potentially interrelated factors such as reform and early expenditure increases. A relationship between these factors seems quite possible, given the reform movement's focus on government expenditures.

The 1920s

The socio-economic explanations are somewhat more useful for the 1920s than for the previous decade. As before, the percentage foreign-born in the population had no clear impact on the changing concentration of city administrators in the 1920s. Similarly, central city population failed to demonstrate the expected relationship again. In a decade of increasing administrative inputs, my analysis has shown that these inputs increased more rapidly in the larger cities. This, as in the 1910s, is the reverse of the expected relationship. The data suggests that, if a demand-driven mechanism was at work, diseconomies rather than economies of scale in public administration actually existed. This result does not lend plausibility to an economic demand model.

However, one does see the expected relationship between city growth and public administration inputs. Cities with higher growth rates in the 1920s tended to exhibit relatively lower percentage increases in public administrators.

TABLE OF % Change in Conc. of City Administrators, 1920 to 1930
BY % Change in City Population in the 1920s

	ADMINISTRATION	
POPULATIONCHANGE	Lower	Higher
Lower	6	8
Higher	8	3

Such results suggest that inputs to public administration did grow during the 1920s in the manner suggested by a demand based on population, in accordance with the socio-economic model. Specifically, if a particular city experienced a more rapid growth in population, it would likely see a smaller proportional increase in inputs to public

administration than other cities. This finding meshes well with a demand-based model and its proposed economies of scale.

The political model suggests the same relationship with changing administrative inputs as was evident in the previous decade. Again, tabular analysis suggests a fairly clear relationship between Economy Reform³² and relatively lower percentage change in inputs to city administration in the 1920s.

TABLE OF % Change in Conc. of City Administrators, 1920 to 1930
BY Reform Measure in 1923

REFORM	ADMINISTRATION	
	Lower	Higher
No Reform	7	8
Partial At-Large	2	0
At-Large Council	2	1
Commission Gov't.	3	2

This comparison uses the measure of reform from 1923, when the movement had clearly passed its peak in influence. One possible explanation of the overall increase in inputs to city administration in the 1920s, given the continuing negative relationship with reform, might simply be the decreased presence of the reform movement in this decade. For example, while seven cities in my sample had fallen within the Economy Reform group in the 1910s, only five did so in the 1920s. And the reduced influence of reform might very well be explained, in part, by the changes it had already produced in administration.

Among the budgetary variables, 1920s expenditures displayed the same relationship to 1920s changes in inputs to city administration as was seen in the 1910s. However, the

³²Recall that this term includes both the "Partial At-Large" and "At-Large Council" values of reform.

opposite relationship appears between the budgetary determinants of the changes of the 1910s (which were previously isolated) and the increased inputs to administration of the 1920s. These might be considered, more generally, to be companion relationships, which could be used to describe an overall causal scheme. Put simply, the increasing concentrations of city administrators of the 1920s were associated with increasing expenditures before 1910, commonly followed by decreased expenditures in the late 1910s and early 1920s.

The total expenditure variable can be used to illustrate this relationship. An increasing concentration of city administrators in the 1920s was associated with higher total expenditure levels in 1908, but this was generally a weaker relationship than that seen between expenditures and changing administrative inputs in the 1910s.

TABLE OF % Change in Conc. of City Administrators, 1920 to 1930
BY Total Per Capita Expenditure Level in 1908

EXPENDITURES	ADMINISTRATION	
	Lower	Higher
Lower	9	5
Higher	5	6

However, there was a somewhat stronger relationship between such increased inputs to public administration in the 1920s and lower levels of total expenditure in 1923.

TABLE OF % Change in Conc. of City Administrators, 1920 to 1930
BY Total Per Capita Expenditure Level in 1923

EXPENDITURES	ADMINISTRATION	
	Lower	Higher
Lower	5	7
Higher	9	4

This pattern is repeated in the relationship with percentage change in total expenditures. Greater increases in inputs to city administration were seen with greater percentage changes in total expenditures from 1905 to 1908. But those same increases were also related to smaller percentage changes in total expenditures from 1919 to 1923.

Examination of administrative expenditures again discovers the above-mentioned relationship, at least in the percentage change indicators, although somewhat different years are involved. Increased concentrations of city administrators in the 1920s were related to greater percentage changes in administrative expenditures from 1908 to 1911, and to smaller percentage changes in administrative expenditures from 1911 to 1915. Such repeated patterns suggest two general conclusions. First, as before, inputs to public administration appear to vary as a reaction to extremes in expenditures, including those expenditures in specific areas such as general government (or administration). This conclusion can be tentatively expanded to suggest that this includes not only reaction to high or increasing, but also to low or decreasing expenditures. The second conclusion, although admittedly based on weaker relationships with the indicators of the earlier decade, is that it was the same or a similar group of cities which engaged in both the greatest reductions and the greatest increases in concentrations of city administrators during these two decades. This implies a cycle in inputs to public administration, reacting first to "high", and later to the resulting "low" expenditures.³³

In conclusion, potential explanations of the 1920s' increasing inputs to city

³³Even using the crude measure of simply above or below average percentage change in the concentration of city administrators, seven cities in the sample followed the cycle of greater cuts and then greater increases in administrative inputs. These cities were: Baltimore, Boston, Chicago, Philadelphia, Pittsburgh, New Haven and Worcester.

administration include the following. First, one might explain such changes, at least partially, using a demand-driven model based on city population. Second, Economy Reform again explains only decreasing inputs to administration in this decade. However, the waning of the reform movement itself might be important to the 1920s' trend in city administration. And third, the budgetary model again suggests a plausible explanation for such increasing inputs, implying a negative reaction to extremes in expenditures. In addition, this model presents the possibility of a coherent cycle in city administration from 1910 to 1930, involving particular cities which first cut, and then restored administrative inputs. Regression analysis, however, discovers no clear explanatory results, such as those found for the 1910s. This implies that the causes of change in city administration staffing levels in the 1920s may have been more fragmented and complex than those operating in the 1910s.

County Administration in the 1920s

The final major question of interest concerns the increasing concentration of county administrators within the sample cities during the 1920s. Since the small numbers involved would often distort a percentage change measure for county administrators alone, I will examine this trend by using the combination of the two levels of administrators: city plus county. Thus, the independent variable will be operationalized as the percentage change in concentration of city plus county administrators from 1920 to 1930.

As seen throughout this analysis, the socio-economic model, which suggests that demand determines urban service inputs, is of little explanatory value. First, the percentage who were foreign-born had no impact on the combination of city and county administration. Second, the unexpected relationship of greater increases in administrative inputs in larger

cities during the 1920s again conflicts with the socio-economic theory of economies of scale, and thus offers no explanation. Finally, unlike the analysis of city administration during the 1920s, changes in central city population appeared to have no impact on county administration, even though one may hypothesize a direct connection between that population and the need for county services, as well as city services. Such findings not only refute the hypothesis of socio-economic demand in the case of county administration. They also weaken support for such a hypothesis in the case of local administration as a whole during the 1920s.³⁴

The reform variable also seems to have little impact on the combination of city and county administrators during the 1920s. This is a reasonable finding, given previous results on reform. It has already been shown that Economy Reform had only a negative impact on city administrative inputs during this period. The county government, representing the area outside the central city, was likely to be dominated by the same class of people who populated the reform movement, and would therefore be considered a less important target for reform activity. The slight association between the reform movement's presence and the inputs to both city and county administration appears as follows.

TABLE OF % Change in Conc. of City and County Administrators,
1920 to 1930 BY Reform Measure as of 1923

REFORM	ADMINISTRATION	
	Lower	Higher
No Reform	6	9
Partial At-Large	1	1
At-Large Council	2	1

³⁴Both city and county officials within the city's territory would presumably be responding to the demands of population change. That this response was seen only among city officials suggests that an overriding political factor was at work, as well.

Commission Gov't. 3 2

Again, as at the city level alone, the presence of reform offers little explanation of the increasing inputs to urban administration during the 1920s.

Budgetary variables do, however, offer an explanation of the changing inputs to public administration at this level, similar to that on the city level. The pattern of association seen before, that is increasing inputs to administration with higher expenditures before 1910 and lower expenditures around 1920, now appears weaker, but is still present in this analysis. It is seen, first, in the relationship of increased concentration of city and county administrators with a higher percentage change in total expenditures between 1905 and 1908. This relationship is almost exactly reversed when comparing such administrative inputs with the percentage change in total expenditures between 1919 and 1923.

TABLE OF % Change in Conc. of City and County Administrators,
1920 to 1930 BY % Change in Total Expenditures, 1919 to 1923

TOTAL EXPENDITURES	ADMINISTRATION	
	Lower	Higher
Lower	5	9
Higher	7	4

However, this pattern, suggesting reaction to budgetary extremes, is found to be very weak when attempting comparison of the combination of city and county inputs to administration with total expenditure levels.

Similarly, there is only a suggestion of such an expenditure related pattern seen in comparing levels of administrative expenditures with manpower inputs to administration. But a clear indication that this pattern still operates is seen when employing either the

percentage change or absolute change measures of administrative expenditure. This becomes most obvious in the comparison of the changing concentration of city and county administrators with absolute changes in administrative expenditures.

First, there was a strong association between increasing inputs to local administration in the 1920s and larger increases in city administrative expenditures between 1905 and 1908.

TABLE OF % Change in Conc. of City and County Administrators,
1920 to 1930 BY Abs. Change in Admin. Expenditures, 1905 to 1908

ADMIN. EXPENDITURES	ADMINISTRATION	
	Lower	Higher
Lower	11	6
Higher	1	7

And there was also a clear association between such inputs and smaller absolute increases in city administrative expenditures between 1915 and 1919.

TABLE OF % Change in Conc. of City and County Administrators,
1920 to 1930 BY Abs. Change in Admin. Expenditures, 1915 to 1919

ADMIN. EXPENDITURES	ADMINISTRATION	
	Lower	Higher
Lower	6	10
Higher	6	3

These results suggest that at the county level, as well as at the city level, inputs to administration varied, during the 1920s, with preceding expenditure extremes, and more specifically with administrative expenditures. The analysis also suggests that the increasing administrative inputs at the county level were a part of the cycle of budgetary reaction which

began in the 1910s.

The general conclusion on the increasing county administration inputs in the 1920s seems to be that explanatory relationships similar to those for city administrative inputs hold, with one exception. Reform again had negative effects on such inputs, and can only help explain the changes through its decreasing presence. Socio-economic variables, however, lose their explanatory power in this particular analysis. There was no indication of demand, either in the form of population or of percentage foreign-born, driving inputs at the county level. Finally, the budgetary variables continue to offer an explanation of changing inputs. Increasing inputs to public administration appeared to be in reaction to budgetary extremes, which presumably were manifested in actual service changes.

There is an alternative explanation which might help explain the general weakness of the proposed models at the county level. Increasing administrative inputs may have occurred at the county level at this time because of the increasing financial power and patronage brought by new federal money being administered at the local level. Such funds would generally be funnelled through the counties.³⁵ This alternative explanation would suggest that national trends, rather than local factors, may have brought about the change toward increasing administration at the county level.

Implications of the Statistical Analysis

³⁵While such funds may not have been available only at the county level, Bruce M. Stave's work suggests that differences in political leadership may have created this financial flow. Pittsburgh, like many other central cities, was Republican-controlled before the Depression. Republican resistance to public employment may have allowed the Democratic machine to build itself up in the counties, based on its control of WPA jobs. See Bruce M. Stave. *THE NEW DEAL AND THE LAST HURRAH: PITTSBURGH MACHINE POLITICS*. Pittsburgh: University of Pittsburgh Press, 1970. pp. 124, 125 and 182.

Overall, this statistical analysis allows some fairly clear conclusions on the relative value of the three explanatory models in the case of this two-decade cycle of decreasing and then increasing inputs to local public administration. First, it leaves open the possibility of a demand-driven model of services. This would suggest that unnecessarily high levels of public administration staffing at the beginning of the period were reduced during the 1910s by the reformers' activities, and by public reaction to budgetary excesses. Following this, inputs to administration increased in the 1920s in response to the demands of population. Such a model fails in at least two ways. It fails to explain the fact that the determinants related to both the cuts and restorations of administration suggest that a single subgroup of the sample engaged in this distinctive cycle. This should not have been so if increased inputs were related to demand in the 1920s. And it offers no explanation of the increasing inputs to county administration.

A second scenario seems more likely. This would discount the socio-economic variables as determinants of services almost completely. It would again explain the decreasing concentrations of city administrators in the 1910s through a combination of the Economy Reformers' intervention and public reaction to high total and administrative expenditures seen before 1910. However, this second model would explain the increasing concentrations of both city and county administrators in the 1920s by simply repeating the budgetary reasoning. In other words, the increases occurred as a reaction to decreased expenditures around 1920, which were presumably noticeable in the decreased services which would accompany such spending. (This hypothesized cycle is supported by the relationship between the 1920s' increasing inputs to public administration in subset of cities and their increasing expenditures just prior to 1910, followed by decreasing expenditures during the 1910s.) Possible additional factors in the 1920s would include (1) the weakening of the reform movement (even though it retained its earlier spending preferences) and (2)

the shift in the flow of finances toward the county government, due to forces external to the city region.

PITTSBURGH: A CASE STUDY

To this point, I have essentially been identifying associations between variables and implicitly assuming causal relationships between these variables. For example, I have assumed that the presence of reform, and reactions to high or increasing, spending resulted in decreases in the numbers of administrators relative to cities' populations in the 1910s. I intend to use a case study of Pittsburgh to demonstrate the mechanism by which some associated variables brought about change. The model of budgetary reaction, being the strongest potential cause of changes throughout the two decades, would be the most interesting to examine. However, the assumed mechanism (i.e. the general reaction of the polity to extreme swings in expenditures and services) would be difficult to trace. The reform movement, on the other hand, was sufficiently organized, and has been sufficiently studied to allow easier examination of its activities. Therefore, I will examine the varying presence of reform in Pittsburgh government, during this period, in an attempt to establish and present a fuller account of the hypothesized causal relationship.

Pittsburgh experienced a clear cycle in its number of city administrators per 100,000 population, from 83.7 in 1910, to 55.1 in 1920, and back up to 76.7 in 1930. When one also includes county administrators, the 1930 concentration exceeds that of 1910. And Pittsburgh exhibited greater than average cuts, followed by greater than average increases in administrative inputs during these two decades. I examine, here, the limited hypothesis that decreased inputs to urban administration in Pittsburgh during these decades were, in

part, a result of the presence of the reform movement, in its economizing mode.

This relationship can best be seen by simply comparing two mayors of Pittsburgh, and their governments, during the 1910s, as the reform movement was gaining strength. The first of these is William Magee, a machine politician who served as mayor from 1909 to 1914. The second is Joseph Armstrong, a reformer and mayor of Pittsburgh from 1914 to 1918, who had previously served under Magee as the city's Director of Public Works.

Making such a comparison of political organizations' activities first demands a clear understanding of just what administration is. To this point, I have rather bluntly assumed that administration is a single, uniform function that can be identified simply by isolating those labelled as administrators (as done, for example, by the U. S. Census). In carrying out this case study, the difficulty of identifying particular positions as administrative ones remains, but the functions of administration seem almost to differentiate themselves. In the first place, administrators clearly function to manage normal operation in a city, at the chosen level of service provision. But they also perform a second function which is substantially different. Administrators also engage in planning and oversight. One might equate this second function with managing changing services over time. I will employ this dual characterization of the functions of administration to analyze the behavior of the opposing types of political administrations in Pittsburgh in the 1910s.

The political machine, which had run the city of Pittsburgh for decades, had fragmented at about the turn of the century. The reform movement, which had been present in Pittsburgh since at least the 1880s, obtained some surprising successes in this atmosphere of political flux. George Guthrie, a reform activist, had been elected mayor in 1906, and held the post for one term, until he was replaced by Magee in 1909. Under the Guthrie administration, the city of Pittsburgh adopted a civil service system. This legislation,

passed in 1907, represented another significant success for the reformers, as the improvement of the quality of government workers was a major goal of the movement. Beyond this, however, the Guthrie administration appears to have been largely checked in its actions by the opposition of a hostile city council.

Reform activities, however, clearly continued in Pittsburgh. In 1911, under the administration of Mayor Magee, the Pittsburgh government was reorganized into a strong mayor form with a single council, all of whose members were elected at large. This qualified it, by my analysis, as an "At-Large Council" or strong "Economy Reform" city. While the at-large council was undoubtedly desirable in the reformers' eyes, allowing the negation of the strength of lower class ethnic groups in the political sphere, it seems curious that such a measure passed under a machine administration. An explanation might include the points that such a change had to be made at the state level, out of the reach of the local machine, and that the change to a strong mayor form, with its increased executive power, may have been acceptable to Magee.

It was in this atmosphere of increasing reform activity and success that William Magee was elected mayor, beginning his single term in 1909. Although this mayor was actually a young relative of Christopher Magee, who had been half of the command of Pittsburgh's political machine in the late 1800s, he often made surprisingly reform-like proposals. For example, he expressed a desire to monitor the city government's functions in a "modern and scientific manner", in one of his later annual messages to the city council.³⁶ Roy Lubove, in his book on twentieth-century Pittsburgh, characterizes the apparent contradiction, pointing out that Magee was "...a combination of machine politician and social statesman."³⁷ Magee

³⁶City of Pittsburgh. Executive Department. ANNUAL REPORT. 1912, n.p.

³⁷Roy Lubove, TWENTIETH CENTURY PITTSBURGH. New York: John Wiley and Sons, Inc., 1969. p. 54.

clearly was a machine politician, but also knew enough to bend toward the current rhetoric of reform. His administration was also clearly opposed to the reform movement. This can be seen, for example, in complaints from the Civil Service Commission members, in 1912, that the City Council was refusing to sufficiently fund its operations.³⁸ This administration, although operating under some reform institutions, and under pressure from reformers, did not work toward reformers' goals.

The Magee administration clearly supported increased inputs to city administration. Early evidence of this is seen in the mayor's annual message for 1910.³⁹ Mayor Magee advocated support for all three new departments which had just been authorized by the state legislature. These included an Art Commission and a Department of City Planning. In addition, a new Department of Supplies would be created, comprising a completely new level of administration to analyze and supervise purchasing. Further, Magee called for a topological survey of Pittsburgh, a survey which was assumed to be of general value toward future city projects. And finally, he called for a combined planning effort by the county and the city's newly authorized planning department. It is apparent that this machine mayor's preferences for increased administration almost all revolved around the planning and oversight functions. For example, the purchasing department would presumably engage in oversight of the city's supply activities. And planning would be carried out, either through the new department, or through the use of the one-time, but apparently extensive topological survey.

The actions of the Magee administration back up his stated intentions in the area of administration. The Department of Supplies was in operation by the middle of 1911, and the

³⁸City of Pittsburgh. Executive Department. ANNUAL REPORT. 1912, p. 118.

³⁹City of Pittsburgh. Executive Department. ANNUAL REPORT. 1910, pp. xii-xxv.

Department of City Planning was staffed by 1912. The topological survey was also funded in 1912. Two other measures affecting administration were initiated in 1911. First, Magee created a small group within the mayor's office to work on the budget and purchasing systems. (This involved the hiring of three new accountants.) And, under pressure from the state to upgrade the sewer system, he hired engineering consultants to undertake a short-term investigation of the waste disposal problem. These two measures again demonstrate a willingness to fund oversight and planning functions in administration, respectively.

Magee's expressed irritation at the delay in funding of the topological survey demonstrated his fundamental disagreement with the reformers, in the area of administration. He claimed that refusal to complete such a survey, on the grounds of economy, would be "a travesty on the word".⁴⁰ Evidence suggests that the Magee administration was not only willing, but enthusiastic in providing inputs to administration for the purposes of planning and oversight. Presumably, operational management continued through this period as well. The implication of such evidence, assuming that the Magee administration was representative of machine politics in this period, is that machine government took a broad view of the functions of administration, and was generally willing to support administrative functions.

The idea that such a significant difference in outlook existed between machine politicians and reformers is supported by Magee's interpretation of "scientific management".⁴¹ He equated this phrase with "maximum service at minimum cost". This interpretation suggests that he was interested in the overall effectiveness of government of government services. This was clearly not efficiency interpreted as economy, as the

⁴⁰City of Pittsburgh. Executive Department. ANNUAL REPORT, 1911, p. 20.

⁴¹City of Pittsburgh. Executive Department. ANNUAL REPORT. 1911, p. 101.

reformers were likely to advocate, where the output level of services would be only a secondary concern. The results of such differences were already becoming apparent, during this decade, in the area of administration. Armstrong complained in 1910, from his position as Director of Public Works, that more money was being spent on planning than on actual improvements.⁴²

The rhetoric of the Armstrong administration certainly suggests a reform outlook. During his tenure, both the Controller and the members of the City Planning Commission filed annual reports strongly emphasizing the business-like qualities of government.⁴³ And Armstrong's statement upon entering office, also appearing in the 1913 annual report, encouraged the participation of "civic societies" in the affairs of the local government. While rhetoric may be deceiving, as Magee demonstrated, the more extreme positions taken in these statements suggest that this was not another case of "statesmanship".

The Armstrong administration's actions probably provide the best evidence of its orientation, however. Armstrong quickly established his intentions. Upon taking office, he reinstated Mayor Guthrie's choice as the Director of the Department of Public Health.⁴⁴ This was the same individual whom Magee had removed from office, and replaced with a machine supporter known to be involved in graft. Clearly, Armstrong was choosing personnel from among the reform ranks. The City Council's actions also revealed reform preferences. For example, by 1914, it was using the Pittsburgh Civil Service Commission's studies on job classification in its budget considerations. Such evidence makes it fairly clear that Mayor Armstrong, and his administration, represented the reform movement.

⁴²City of Pittsburgh. Executive Department. ANNUAL REPORT. 1910, p. 5.

⁴³City of Pittsburgh. Executive Department. ANNUAL REPORT. 1913, p. 106, 1915, p. 91. The 1913 reports were filed in early 1914, under the newly elected administration.

⁴⁴Roy Lubove, TWENTIETH CENTURY PITTSBURGH, p. 43.

In the area of policy, at the most general level, Armstrong's stated goals appeared to be the same as those of Mayor Magee. He claimed early on that he was concerned with improvements to government as the city of Pittsburgh grew.⁴⁵ This was essentially the same goal that Magee had proposed in his annual report only two years earlier. Actions on administration inputs, however, clearly differentiate the two. Early changes in administration made by Armstrong were dominated by the consolidation of administrative units, toward the expressed goal of improving their performance. This technique must be contrasted with the simple increase of administrative inputs which Magee had practiced.

In his 1914 message to Council, Mayor Armstrong described four consolidations of bureaus and departments within Pittsburgh's executive branch. These included, for example, the consolidation of the offices of the Delinquent Tax Collector and the Treasurer, and the consolidation of maintenance of vehicles for all departments into a single Department of Motor Vehicles. While some new small bureaus were to be created, consolidation of administrative units was clearly Armstrong's major technique for addressing the administration of the city's services.⁴⁶

The above-mentioned changes largely effected operational management of city services. The Armstrong administration repeatedly employed another technique in dealing with the planning and oversight functions of administration. The best example of this technique can be seen in his plans, which were carried out in 1915. Armstrong eliminated the entire paid staff of the Department of City Planning, with the exception of the City Planning Commission's "secretary-engineer". (And this person was to work for the Department of Public Works whenever he was not occupied at City Planning.) In discussing

⁴⁵City of Pittsburgh. Executive Department. ANNUAL REPORT. 1914, p. iv.

⁴⁶*Ibid.*, pp. x, xi.

this move, Armstrong recognized the value of planning, but claimed that the city's finances forced such a move. He also explicitly recognized that his actions amounted to the sacrifice of planning capability, settling for only routine maintenance.⁴⁷

Actions aimed at limits on or the elimination of all but the management functions of administrators were taken repeatedly by the Armstrong administration. By 1914, Armstrong had reduced the city's engineering staff to the point where it could only keep up with its own current work. This reduction resulted in specific complaints by his own Superintendent of the Bureau of Engineering, N. S. Sprague, who stated that an increased staff would be necessary in order to complete such tasks as the comprehensive sewer plan. This was apparently a clear enough problem that Mr. Sprague was willing to list the personnel needed, including two more "assistant engineers".⁴⁸ However, such cutbacks continued throughout Armstrong's tenure as mayor. Sprague was still complaining, in his portion of the 1916 annual report, of the decreased staffing, with specific reference to the decreased number of assistant engineers. By this date, even funds for the preservation of currently existing sewer plans (which were being worn out) could not be secured. Clearly, this constituted a different treatment of the planning function than that seen under Magee. And these decreased inputs to non-managerial administration did not appear to involve the removal of unnecessary manpower. Rather, they placed real limitations on the planning function.

The pervasiveness of this attitude toward administration was underscored by the actions taken in 1916 concerning the Civil Service Commission. Its operating staff was cut by one half for the next budget year. Comments in the annual reports suggest that the

⁴⁷ *Ibid.*, p. xi.

⁴⁸ *Ibid.*, pp. 424, 425.

Armstrong administration considered this commission's work to be essentially finished.⁴⁹

The implication of such an action is that city services were to be treated as static entities, rather than operations which evolved in response to changing needs. Thus, planning seemed to be a superfluous activity in the eyes of the reformers.

In comparing the two administrations, it is apparent that, even in the case of a favored function such as civil service, the reformers actions were more oriented toward the elimination of the non-managerial functions of administration. And Armstrong's consolidation efforts suggest that the reformers intended to minimize the costs of operational management as well. The overall implication is that the reformers saw reductions in administrative inputs as a valid, and maybe even preferred means of minimizing costs. This was clearly a different attitude toward administration than that of the machine politicians who, based on the Magee example, appeared to be interested in the effectiveness, and not only the cost of administration. This apparently led to quite different actions on administrative staffing by two successive administrations. These were administrations which presumably faced roughly the same public service environment, but which held greatly differing political views.

Such conclusions on the relationship of administrative inputs to reform can be partially verified, for the remainder of the period, by a brief analysis of administrative expenditures under the sequence of Pittsburgh mayors. I examined the City Controller's Reports for the second year of the Armstrong, Babcock, Magee (second term) and Kline administrations.⁵⁰ Changing costs of labor, or a sort of municipal services inflation factor,

⁴⁹City of Pittsburgh. Executive Department. ANNUAL REPORT. 1916, pp. 43-48.

⁵⁰These were the years 1915, 1919, 1923 and 1927. Earlier reports did not use comparable expenditure categories. I am assuming that the second year's expenditures would fairly well reflect each administration's preferences.

would make comparisons of administrative expenditures from year to year somewhat difficult and questionable. However, a comparison of the types of administrative inputs preferred, as seen in percentages of administrative expenditures in each budget area in a given year, can easily be made. This analysis will compare the administrative preferences of two reform mayors, Armstrong and Babcock, with those of two machine mayors, Magee and Kline.⁵¹

I have chosen areas within the "General Executive" portion of Pittsburgh's "General Government" expenditures which best represent non-managerial administration. These areas include the survey and design functions of the city's Bureau of Engineering, and the city planning function. In addition, I have separated the "topographical survey" from these various divisions' expenditures, as it appeared in different divisions in 1915, 1923 and 1927. The following table displays the percentage of general executive expenditures given over to each of these planning functions, and to my overall group of non-managerial functions, during each of the four sample years.

PERCENTAGE OF TOTAL "GENERAL EXECUTIVE" EXPENDITURES

	Armstrong	Babcock	Magee	Kline
	1915	1919	1923	1927
Division of Surveys	8.4	8.8	10.6	9.3
Topographical Survey	0.7	0.0	2.0	5.0
Division of Design	2.3	2.7	4.7	4.3
City Planning Comm.	0.5	0.0	3.8	2.6

⁵¹These political categorizations are based on information from Melvin G. Hall and Peter d'A. Jones' BIOGRAPHICAL DICTIONARY OF AMERICAN MAYORS, 1820-1980.

TOTAL	11.9	11.5	21.1	21.2
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The clear implication of this data is that machine mayors spent a larger proportion of their administrative budgets on planning. It is difficult to make judgements about expenditures on more-or-less creative planning (e.g. surveys versus city planning). This becomes most obvious in trying to decide whether a topographical survey is of more use to, and therefore should be budgeted with, the engineers or the city planners. But the overall pattern of a lower proportion devoted to this group of planning functions in Pittsburgh under the two reform mayors supports my conclusions. Reformers were clearly more willing to minimize non-managerial administration as a means of reducing expenditures.

Lubove suggests reasoning which would explain such an outcome of reform.⁵² He suggests that while the reformers may well have desired effective government performance, in addition to economy, these middle class activists limited their own options by their belief in "entrepreneurial autonomy". This belief allowed for economizing activities, as a negative manifestation of reform, but prohibited, in large part, positive government activity in social welfare and service functions. Their preference was for minimal government, which would impose the least burden on private business. Thus, they preferred to rely on voluntary actions to fulfill public needs. The result, as voluntary groups predictably failed to fulfill the needed functions, was an economical urban government which did not effectively address public needs. Clearly, the minimization of the planning capabilities and the operational management functions of public administration would mesh well with the reformers' beliefs in limiting the more general functions of government.

⁵²Roy Lubove, TWENTIETH CENTURY PITTSBURGH. pp. 22,23.

CONCLUSION

This study has identified a pattern of decreasing and then increasing inputs to urban public administration during the period between 1910 and 1930. This was accompanied by a shift toward increased public administration inputs at the county level in the 1920s. Analysis of these changes leaves open the possibility of a relatively conventional explanation. Such an explanation would be based on the notion of the smoothing out of earlier, varying inputs to urban public administration. It would suggest that public administration had become a factor determined by socio-economic demand by the 1920s. However, my preliminary analysis of the factors associated with such changing inputs to administration supports an alternative explanation. Decreasing inputs appear to have been a result of the economizing tendencies of reformers, and of the reaction of the polity against high expenditures at the beginning of this period. Subsequent increased inputs to urban administration again came as a reaction to extremes of expenditure. But this time, the expenditure extremes may well have been the result of the very same decreases in expenditures which constituted the initial reaction.

A case study of reform in Pittsburgh lends support to the hypothesis that these groups were responsible for changing inputs to public administration. Not only does it establish more clearly the connection between the Economy Reformers and the outcome of decreased administrative inputs. It also demonstrates just how these reformers brought about changes in administration. They apparently concentrated on economy in administration through the elimination of its planning and oversight functions, working toward the goal of the minimum administration necessary to manage the city's current operations. (One should bear in mind, however, that as the minimum necessary level of

services is an issue of contention, it is arguable the even administration sufficient for current services would have been maintained.)

Thus, the tentative conclusion of this study is that identifiable groups, with a common interest in decreased cost of government, brought about a cycle of decreasing and then increasing urban administration staffing. This cycle may well have constituted an unnecessary and undesirable swing in inputs to administration. It almost certainly involved an undesirable change in the character of administration, with a reduction toward only its simplest functions. This elimination of administrative functions, such as planning, was probably quite detrimental to the long-run health of the city.

A Rand Corporation study has examined the effects of some of the current efforts at local government "fiscal restraint" in the United States.⁵³ This study, in the area of public expenditures, arrives at some conclusions which are strikingly similar to my own. For example, the authors have found that the greatest expenditure cuts occur in cities which have experienced the greatest recent spending growth. And they explain the variation in fiscal responses, between cities, as an outcome of differing political choices. The Rand researchers also issue a similar set of warnings. In general, they suggest that exercises in fiscal restraint are likely to have unexpected outcomes. More specifically, they have found that public service functions are often curtailed in such a way that a major outcome may be to "degrade future service levels and efficiency." This last finding is clearly similar to my own conclusion that all but current operational management is considered expendable in a government economy drive. The Rand study offers substantial evidence that such drives for government economy, at least in some general form, are a reoccurring phenomenon.

⁵³Mark David Menchik, et. al. FISCAL RESTRAINT IN LOCAL GOVERNMENT: A SUMMARY OF RESEARCH FINDINGS. Santa Monica, Calif.: The Rand Corporation, April 1982.

Assuming that such events throughout our urban past are sufficiently comparable (whether they be called "fiscal restraint", "economy reform", or some other name), one might hope that policymakers, if not the general public, would learn from these experiments in economizing. There appear to be some clear lessons to be learned. As one budget administrator put it, we should avoid blind budget cutting, and instead engage in judicious action which considers local variations in expenditure requirements, as well as the increased level of services which the public expects of government. Unfortunately, this message does not appear to have had significant influence to date. These were the suggestions that E. S. Morrow, Pittsburgh's City Controller, made in 1915, the year after Mayor Armstrong's first round of administrative reductions.⁵⁴ Nearly seventy years later, the Rand Corporation is still warning against indiscriminate reductions.

It seems likely that the continuing bouts of urban government economizing are highly political in their origin, emanating from our dominant, suburban middle-class. But whatever their origins, the effects that drives for economy in government have on urban public services, and on urban public administration specifically, certainly constitute an area of study ripe for the work of urban historians with an interest in urban policy.

⁵⁴City of Pittsburgh. Executive Department. ANNUAL REPORT. 1915, pp. 90, 91.

APPENDIX I

NUMBER OF ADMINISTRATORS PER 100,000 POPULATION:

	CITY / CITY PLUS COUNTY		
	1910	1920	1930
Baltimore	56.0/58.4	47.6/51.6	60.8/68.8
Boston	86.9/92.0	75.3/80.1	91.0/103.8
Buffalo	73.6/79.7	84.7/90.4	77.0/88.1
Chicago	57.2/65.3	41.6/48.0	57.9/68.6
Cincinnati	64.9/71.5	45.9/46.6	47.0/71.8
Cleveland	61.2/71.3	47.7/54.7	47.3/66.1
Jersey City	42.2/51.2	62.7/81.2	76.7/102.0
Minneapolis	50.8/57.4	51.8/63.6	49.1/64.2
Newark	74.0/76.8	71.9/74.8	92.7/98.8
Philadelphia	65.3/67.1	52.5/54.2	76.9/85.3
Pittsburgh	83.7/94.8	55.1/68.5	76.7/110.0
Providence	37.0/37.4	41.2/43.4	45.9/46.6
Rochester	77.9/83.9	59.8/67.3	50.3/61.9
St. Louis	84.1/86.5	84.7/88.2	72.4/77.1
St. Paul	72.2/83.4	76.3/86.1	51.5/66.6
Albany	58.9/63.8	68.8/79.4	75.3/87.9
Bridgeport	51.0/51.9	47.4/48.8	40.0/42.3
Cambridge	66.8/72.5	63.8/72.0	66.9/75.7
Grand Rapids	61.3/68.4	56.7/66.8	52.2/65.8
Nashville	46.2/59.8	53.2/71.8	73.4/89.0
New Haven	57.6/59.1	43.1/43.1	63.3/65.2
Paterson	37.4/45.4	37.5/44.2	50.5/63.5
Scranton	64.7/76.2	46.4/57.3	43.2/57.9
Syracuse	68.5/76.5	51.2/57.1	55.4/63.5
Worcester	45.2/52.7	36.2/40.6	52.7/64.5

APPENDIX II

VALUES FOR THE REFORM VARIABLE

	1912	1915	1917	1923
Baltimore	0	0	0	0
Boston	2	2	2	0
Buffalo	1	1	3	3
Chicago	0	0	0	0
Cincinnati	1	1	1	1
Cleveland	1	0	0	0
Jersey City	0	3	3	3
Minneapolis	0	0	0	0
Newark	0	0	3	3
Philadelphia	0	0	0	0
Pittsburgh	2	2	2	2
Providence	0	0	0	0
Rochester	0	0	0	0
St. Louis	1	2	2	2
St. Paul	1	3	3	3
Albany	0	0	0	0
Bridgeport	0	0	0	0
Cambridge	0	1	1	1
Grand Rapids	0	0	0	3
Nashville	0	3	3	0
New Haven	1	1	1	0
Paterson	0	0	3	0
Scranton	2	2	2	2
Syracuse	0	0	0	0
Worcester	0	0	0	0

0	No Reform	2	At-Large Council
1	Partial At-Large	3	Commission Government

APPENDIX III

TEST REGRESSION EXPLAINING 1910S DECREASE IN ADMINISTRATORS

C70 = % Change in Conc. of City Administrators, 1910-20
 C65 = Absolute Change in Administrative Expenditures, 1905-08
 C100 = Recoded Reform Measure for 1917 (with Commission = 0)

-- REGR C70 2 C65 C100

THE REGRESSION EQUATION IS

Y = .0066 - 0.102 X1 - .0885 X2

	COLUMN	COEFFICIENT	ST. DEV. OF COEF.	T-RATIO = COEF/S.D.
--	--	0.00662	0.04742	0.14
X1	C65	-0.10153	0.05621	-1.81
X2	C100	-0.08848	0.04706	-1.88

THE ST. DEV. OF Y ABOUT REGRESSION LINE IS

S = 0.1771

WITH (25 - 3) = 22 DEGREES OF FREEDOM

R-SQUARED = 23.7 PERCENT

R-SQUARED = 16.8 PERCENT, ADJUSTED FOR D.F.

ANALYSIS OF VARIANCE

DUE TO	DF	SS	MS=SS/DF
REGRESSION	2	0.21477	0.10738
RESIDUAL	22	0.68994	0.03136
TOTAL	24	0.90471	

FURTHER ANALYSIS OF VARIANCE

SS EXPLAINED BY EACH VARIABLE WHEN ENTERED IN THE ORDER GIVEN

DUE TO	DF	SS
REGRESSION	2	0.21477
C65	1	0.10391
C100	1	0.11086

ROW	X1 C65	Y C70	PRED. Y VALUE	ST. DEV. PRED. Y	RESIDUAL	ST. RES.
2	-0.56	-0.1343	-0.1135	0.0989	-0.0208	-0.14 X
4	1.92	-0.2727	-0.1883	0.0936	-0.0844	-0.56 X
7	0.01	0.4865	0.0056	0.0471	0.4809	2.82R
11	1.72	-0.3422	-0.3450	0.1089	0.0027	0.02 X

R DENOTES AN OBS. WITH A LARGE ST. RES.

X DENOTES AN OBS. WHOSE X VALUE GIVES IT LARGE INFLUENCE.

DURBIN-WATSON STATISTIC = 2.12

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