

The Political Economy of the U.S. Urban Fiscal Stress in the Early 1980s

1980

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. Introduction

"The urban crisis is not over ; it merely has been redefined and relabeled as fiscal retrenchment and fiscal stress."

With the fiscal crisis of New York as a stimulus, it has become increasingly popular to attempt to portray the extent of the fiscal problems that cities are experiencing. There were many warning sirens for the cities. Many scholars have studied urban fiscal stress (or fiscal strain or fiscal crisis, whatever) both theoretically and empirically.¹ In general, many studies differed in their focuses on the cause of fiscal stress. Some have focused on the functional explanations of urban fiscal stress while other studies hinged on the impact of the activities public employee unions exert and others built on the so-called political explanations of urban fiscal crisis.

Nonetheless, some empirical points have not been clear during the booming concern of urban fiscal problems. Those are how much social conditions affect the fiscal state of city governments and how much public employee unions contributed to fiscal stress, and how can we account for the relative explanatory power of the causes of urban fiscal stress?

The causes of urban fiscal stress are very complicated. In a sense, it seems impossible to test the relative importance of those models because of differences in municipalities. No specific model can represent the whole reality. However, many researchers have attempted to assess the relative effects of the numerable determinants on urban fiscal stress, using various methods. This study is also one of those attempts.

In this study, I don't have much ambition to explain the whole puzzle of the research area. I just want to attempt to test the relative effect of the causes of fiscal stress, using the data of the early 1980s. Some may feel that this is not a serious problem because many local governments successfully have improved fiscal woes (Levine et al., 1981). But in 1992, New York city was still shaking and even Chicago which had been cited as a sound financial city was in financial trouble. Thus with this information, this kind of study should be launched again. From a solely methodological point of view, as frequently said, many obstacles stand before an empirical research, including ambiguous indicators, lack of data on political or labor statistics, etc. (Burchell and Listokin, 1981). So, pre-sumably, these problems will limit my study. Thus, I believe that other studies

¹) Monkkonen proved that in fact, there were only 3 fiscal defaults. And thus he argues that "calling current problems "crises" is analytically incorrect (Monkkonen, 1986). Again he concludes, based on an analysis of 941 municipal defaults between 1850 and 1930, that, "[with the exception of the Great Depression], external economic forces alone did not force default on the cities. Instead... most importantly, the dimensions of local political struggle determine[d] who defaulted and when." (Monkkonen, 1984: 125-159).

must supplement this study if necessary.²

Before going to the empirical research, this paper will discuss first what happened in New York of 1975 and in Cleveland of 1978 briefly. This will give some knowledge about the theoretical contour of the studies of urban fiscal stress. Finally, the three representative models explaining urban fiscal stress will be summarized.

II. Warning Sirens : New York and Cleveland

(1) New York City in 1975

Much has been said about the fiscal crisis of urban America since New York's default in 1975. Despite considerable public debate, much remains cloudy. Ideologies and special pleadings were often mingled with efforts to unravel the issues. In fact, *New York Times* in July 1975 provides more than a dozen of different commentaries based on their

¹) This study are based largely on Nathan-Adams (1976), Stanley (1980), Burchell and Listokin (1981), Clark (1976), Clark and Ferguson (1981 and 1983), Stonecash and McAfee (1981), Nivola (1982), Morgan and England (1986), and Rodgers and Straussman (1986).

political opinions (Alcaly and Mermelstein, 1976). Many different but somewhat compatible explanations have been raised. Some studies explained New York City fiscal crisis within the large framework of a worldwide economic crisis (Zevin, 1976; Alcaly and Bodian, 1976). The Congressional Budget Office diagnosed that the immediate crisis stemmed from a loss of investor confidence in the credit worthiness of the city in addition to objective market conditions and the recession (The CBS, 1975). Some accounted for it with a political tincture. Shefter succinctly argued that in reality, the New York City fiscal crisis was above all a political crisis (Shefter, 1977 and 1985). He saw the eruption of fiscal crisis as a starting point in transforming political structure of machine and patronage. In a similar vein but with a more emphasis on urban regime, Pecorella attempted to show that the city's fiscal condition formed a context within which the city's political relationships were worked out (Pecorella, 1987). Bailey focused more on bureaucratic, interest group theories to account for the New York city financial crisis (Bailey, 1984). Others understood it within a Marxist framework (Hill, 1978; Tabb, 1978 and 1982; Lichten, 1986).

The fiscal crisis of 1975 was precipitated by a combination of events resembling the taxpayer's revolts and bondholder's coup. In May 1975, major New York banks refused to underwrite or purchase any more New York City notes and bonds, and thereby drove the city to the verge of bankruptcy. By the intervention of state government into New York city problem, which took the form of exchanges for a series of financial packages, New York City became subject to a myriad of new monitoring agencies, political influences, and enhanced state and federal controls. The most important of these new agencies have been the Municipal Assistance Corporation (MAC), and the Emergency Financial Control Board (EFCB). The MAC resulted in more control of state government. The EFCB particularly increased business control of city budgetary process. It was not clear whether New York was atypical case. The New York City crisis echoed most large, industrial cities which have also been afflicted by financial illness.

(2) Cleveland in 1978

On December 1978, Cleveland became the first major American city since the Great Depression to go into default. The city was unable to persuade the banks to refinance \$14 million in short-term loans. Cleveland case is much more special in the sense that its default in 1979 has been noticed as a political attack of the banks, and capitals to the populist urban political regime. In 1979, Congressional reports reached to the tentative conclusion that Cleveland's default was politically motivated (U.S. Congress, 1979). Todd Swanstrom's study expressed this account most extensively (Swanstrom, 1985). Based on Monkkonen's argument (Monkkonen, 1984) that rather than economic forces, the dimensions of local political struggle determined the financial defaults in history, Swanstrom

declared that Cleveland's default was exactly the case in terms of "the politicalness" of municipal defaults (Swanstrom, 1986).

After comparing default in New York and Cleveland, Beck concluded that the explanation of Cleveland's default lay not in its distressed circumstances at any point in time but with the prolonged mismanagement of its municipal finances (Beck, 1982: 215). Mismanagement resulted in a high ratio of short-term debt to own-source revenues, which was aggravated during the Kucinich administration. Capitals and the banks wanted to sell a small, dilapidated public utility which employed many poor, i.e. the Muny Light System to the CEI (Cleveland Electric Illuminating Company). The populist Mayor Kucinich attacked the banks. Born in conflict with the Banks on the sale of the Muny Light, the Kucinich administration had to face default by the refusals of the banks. In Swanstrom's view, Kucinich was discriminated from his predecessors by the banks. The banks' refusal to roll over the city's notes was motivated by a desire to damage Kucinich politically and prevent him from being reelected. From a slightly different point of view, for the reason why Kucinich failed in reelection, Winnick et al. (1982) pointed out the problems of Kucinich's campaign strategy and lack of strong neighborhood based organizations.

III. The Three Different Models of Urban Fiscal Stress

1. The General Socio-economic Model

This is the most easily accepted explanation among the three models. Many studies of urban decline were built on this explanation. [To list some representative articles, See Stanley, 1980; Nathan and Adams, 1976, etc.] The general concern of this perspective was well summarized by Stonecash and McAfee (1981). This model was derived from a general functional theory of urban deterioration, composed of a set of presumed causal relationships which collectively produce the situation of fiscal stress. The process is as follows:

" The economic decline occurs in central cities, it sets off the gradual and general deterioration of the condition of cities. Concomitantly, the middle class tends to move from the central city to the suburbs. This produces a "filtering down" of the housing stock, and the city's population becomes relatively more lower class, with the accompanying problems rates. These low income populations have more "needs" than government services. Thus, the larger the low income population is, the greater the need for government services, and the greater the level of public expenditures.

As expenditures rise, cities must finance social services activities by raising more revenue through local taxation, and sometimes short-term or long-term debt. If the city does raise taxes

to finance projects in response to adverse social conditions (i.e., outmigration), then the tax base will be strained further. In addition, cities' bond ratings will be decreased and thus will be even more fiscally difficult to borrow money from municipal bond markets. "

This model is basically a functional explanation which proclaims that needs produce expenditure expansion. This model does not answer why and from where such needs are created in a given urban political system and why needs and responses are so different from city to city. The most problematic of this model seems to come from the fact that it ignores the heterogeneous characteristics of cities, and again from the fact that it assumes the uniform responses of cities.

2. Public Sector Militancy Model

This model may be examined within the dimension of political realm but it can also be separated from it. It emphasizes the power of the benefit recipients more than the boundaries of social conditions. It views that the financial woes of major cities have been mostly affected by public union militancy or increased employment payment.

Municipal employees unionized in large numbers only in the late 1960s, inspired in part by the success of blacks and the ability of unions in cities like New York to win major wage increases. (see Levi, 1977; Bellush and Bellush, 1984; Spero and Capozzola, 1973; Stanley, 1972; the ICS, 1976; Horton, 1973; Wellington and Winter, Jr., 1971). Public unions were, at first, seriously perceived as the main cause of financial crisis. Rather, the rapid growth of state and local retirement systems has mirrored the enormous expansion of the public sector in the past. Pension programs once contributed to enhancing labor efficiency, lowering total wages, and alleviating unemployment by simultaneously attracting and retaining proficient workers and mandating the retirement of older (and more highly paid) workers. In the end, the mixture of increasing public sector employment, improved fringe benefits and eligibility provisions, and rising retirement costs put more financial pressure on local governments. For instance, to cover pension obligations which reached \$7.3 billion a year by 1975 and are rising by 16 percent annually, local governments had to raise revenue sources. Nearly 30 percent of Chicago's and 46 percent of property taxes have been used to fund pension systems (Olson, 1982).

The changing setting of local government under the cutback movements did damage to public employee unions by such means as pay freezes, layoffs, and contracting out, etc. Johnston (1982: 204) describes this crisis like this: "Unions were served as a convenient political scapegoat for public officials caught between relatively declining tax revenues, spiraling demands for public services, and the taxpayer's rebellion."

Thus, the impact of public employee unions seems somewhat to have been declined in the 1980s. Nonetheless, this model is worth while to be tested.

3. Political (Leadership) Model

It emphasizes the intervening role of political leadership. This model assumes that political leadership plays a critical role in articulating the concern of a new welfare beneficiary sector, or in the case of many cities in the 1970s, in helping adapt expansive citizen preferences to the austerities of available resources.

Clark and Ferguson(1981 and 1983) maintain that redistributive policy changes are the result of a new sector or coalition bringing pressure to bear on the political leadership, or similarly a new mayor or city-council member seizing the opportunity to forge a new base of popular support. Thus, this model has a more relevancy in the situation of fiscal retrenchment during the 1980s. It indicates some important points but still requires evidences to accept it.

. Cross-sectional Study

This chapter is devoted to an empirical assessment of the three different models. The models focused on urban fiscal stress can be partly tested by the multivariate method using appropriate indicators. I will first discuss research design and then report the results of the mul- tivariate analysis.

1. Research Design

1) Making the Hypotheses

We have seen each model of fiscal stress had very different views on the causes of fiscal illness of the urban America. Based on the assu- mptions of those different models or explanations as discussed above, we can simplify their logic to the quantifiable hypotheses. The following hypotheses are going to be tested with appropriate indicators in the multivariate analysis. The relationships between the causes and effects of fiscal stress implied by each model are as follows:

Hypothesis 1.

The more social needs or the worse social conditions of the cities, the higher fiscal stress level.

Hypothesis 2.

The larger the public employee power, the higher fiscal stress level.

Hypothesis 3.

The larger the base and condition of power centralization in local government, the more impact local leadership will have on urban fiscal stress.

In Hypothesis 3. I do not assume the sign of the relationship. During the 1960s and early 1970s, strong mayors contributed to expand welfare expenditure following the political platforms or by negotiating with unions (see Clark, 1976, 1981 and 1983). But in the early 1980s, their roles might be much more conversely directed toward the expansionary trend of city spending because of the recession and cutbacks in federal aid. Therefore, the relationship claims much more cautious determination.

2) Samples of the Study

There is little consistency in the sampled cities. Stanley's list of troubled cities included only the largest cities while Clark's original 51 city study included some suburbs as well as large cities because it was based on the SMSA cities and excluded very important large cities (New York, Chicago, Detroit, etc), even though his research sometimes compared those samples with other large cities. After then he expanded the sampled cities to 63 cities including some of large cities. While Nivola criticized Clark's the Permanent Community Sample (PCS) of the National Opinion Research Center (NORC), he still, following Nathan's 51 SMSA city sample, selected 51 SMSA cities, which made it difficult to know how much city governments were fiscally stressed, when excluded some suburb cities. To my knowledge, the studies did not include Washington, D.C., because of its uniqueness as a combined state and local government. Few studies sampled 127 cities, including both 85 large SMSAs and 25 small cities (Rodgers and Straussman, 1986; Advisory Commission on Intergovernmental Relations, 1981).

To see the effects on solely city governments, we must select only city governments, not the SMSA cities. Therefore, following Morgan and England (1986), I selected only 50 cities of 250,000 population and over, but I excluded four suburb cities (i.e., Fort Worth, Long Beach, Oakland, and St. Paul) attached to large cities from their 54 sample cities. My data on labor was collected from the ICPSR file which was based on the SMSA codes. Those cities were not included to erase some overlappings between cities and to get more consistent data.

3) Measuring Fiscal Stress

For this study, I selected three dimensions of fiscal stress. They are fiscal dependency, tax burden, and debt status. All three dimensions have been frequently examined in the previous studies.³ The calculation formula of each measure is shown in <Table 1>. Their correlation matrix is given in <Table 2>. The tax burden and debt status are somewhat significantly correlated ($r=.464$), but they are distinct from fiscal dependency dimension.

< Table 1 > The List of Dependent Variables

FISCAL DEPENDENCY	
(Strain1)	The total intergovernmental revenues from all sources, divided by total expenditures in 1981
TAX BURDEN	
(Ltaxburd)	The local government own source revenue divided by total per capita personal income (logged)
DEBT STATUS	
(Lperdebt)	Per capita debt outstanding of city government in 1981 (logged)

< Table 2 > Correlation among Dependent Variables

	STRAIN1	LTAXBURD	LPERDEBT
STRAIN1	1.000		
LTAXBURD	-.065	1.000	
LPERDEBT	-.068	.464**	1.000

** : $p < .001$

¹⁾ see Clark (1976), Clark and Ferguson (1981 and 1983), Rodgers and Straussman (1986), and Nivola (1982), etc.

Why did I choose these measures? First, the overall pattern of city governments has been a growing reliance on revenues other than "their own source" during the decade of the 1970s. So I think that fiscal dependency on intergovernmental aid, especially aid from state government, is a useful indicator for the purpose of this study. If cities have been dependent fiscally upon outside resources and they do not have another possible way to meet financial demands, when the aids end, they are falling into a financial disaster.

Secondly, the concept of tax burden is well acknowledged in the studies of this area. The Congressional Budget Office and the Department of Treasury used very similar indicators (Burchell, 1980:188). Some individual researchers also found a strong relationship between revenue effort (own source revenue / personal income) and Moody's ratings for general-obligation bonds (Peterson, 1980).

Lastly, debt status measures have been commonly used by Nivola (1982), Clark (1977), and Aronson and King (1978). But scholars differed in using indicators for the debt status of city government. For example, Clark and Ferguson, Clark, Morgan and England simply resorted to both "long-term debt" and "short-term debt." By contrast, Nivola (1982: 380) selected short-term debt status, saying that *short-term debt* is the least ambiguous among available indicators of fiscal infirmity. The debate of which indicator is better is not ended. So I choose just "per capita debt outstanding" as an indicator of debt status without being based on either side.

Next, what would be indicators to measure each model of fiscal stress? As I mentioned, we are testing the competing explanations of fiscal stress. The selected indicators to represent each model are summarized in <Table 3>.

At first place, long-term socioeconomic decline of cities is the most frequently mentioned factor on fiscal distress. Nathan and Adams developed a central city "hardship index"-a composite score of six variables (unemployment, dependency, education, income level, crowded housing, and poverty). (Nathan and Adams, 1976) It was calculated by standardizing following six variables;

- (1) Unemployment (percent of civilian labor force unemployed)
- (2) Dependency (persons less than eighteen or over sixty-five years of age as a percent of total population)
- (3) Education (percent of persons twenty-five years of age or more with less than twelfth-grade education)
- (4) Income level (per capita income)
- (5) Poverty (percent of families below 125 percent of low-income level)
- (6) Crowded housing (percent of occupied housing units with more than one person per room)

This hardship index captures a range of socio-economic conditions frequently linked with the general theory of fiscal stress, but loads them into a single scale, thus sparing us the inevitable multicollinearity that would, in this case, contaminate a multivariate analysis.⁴ Thus, to measure social needs of the cities, I use Nathan-Adams' Index. But I transformed it into a new variable combining Z-scored percent of black population because of a high correlation between them ($r=.603$, $p=.000$). This multicollinearity is probably a big shortcoming to the Nathan- Adams index.

In addition to social needs, other frequently chosen socio-demographic variables such as population density, crime rate, and population change were selected. If a city is densely populated and has a high crime rate,

¹) Similarly, Muller of the Urban Institute also listed a set of "municipal danger signals," including outmigration, loss of private jobs, high local tax burden, rising proportion of low-income households, and low increases in regional capita income, inability to annex or otherwise share in regional tax base, high per capita debt service costs, high unemployment, etc. (Muller, 1975). But this list is too desultory and lacks analytical cohesiveness (Stanley, 1980).

city government will spend more expenditure to provide public services to the residents, and thus the city is likely to feel fiscal stress. Welfare expenditure will be measured by the proportion of expenditure of education and health. In addition, we see that cities of which population is declining have difficulty in raising tax base. Because construction expenditures are usually treated as fixed, hard-to-reduce parts of the budget, cities spending much on capital outlays such as highway construction will have little slack of resources to respond to the growing demands from the residents and thus are susceptible to experience fiscal distress.

In terms of fiscal stress of the major cities, blames are easily directed toward the hard-nosed public employee union activities as well as the black population. The expectation that public unions have contributed to urban fiscal stress seems straightforward. The main portion of labor costs has, in general, been wage and non-compensation. Although many studies have been launched to determine the impact of public employee unions on public wages, there are very few empirical evidences on the cause and effect relationship between public-employee union activities and fiscal stress. Even worse is that there is little consensus about their relationship. Many researches have suggested many possible correlations. Some reported a strong positive association while others not.⁵ Therefore, for this study, I separated the wage cost part measured by the percent of government payroll in the total general expenditure from labor power represented by the strength of strikes.

Then, how can we test the political explanation? As shown in most urban studies, political indicators were not well developed and political data were not collected much. A few previous studies, however, included some political variables in their quantitative analyses, no matter how good the variables were. Clark strongly maintained that political leader-

¹) For a positive correlation, see Clark (1977), Benecki (1978), Rubin (1982). To see a less strong and more moderate correlation, refer to Burton and Krider (1973).

< Table 3 > The List of Independent Variables

SOCIO-ECONOMIC VARIABLES	
Social Needs (Nathan1)	Nathan-Adams intercity hardship scale + Z-scored percent black in 1980
Population density (Lpopdens)	1980 data, logged
Population change (Pop8070)	$(\text{Population, 1980} - \text{population, 1970}) / \text{population, 1970} \times 100$
Crime rate (Lcrime)	1981 data, logged
Welfare expenditure (Leduhlth)	A combined proportion of education and health expenditure in the general expenditure of city government in 1981 (logged)
Construction exp. (Lhighway)	The proportion of highway expenditure in the general expenditure of city government in 1981 (logged) [Source: All data above are collected from County and City Data Book, 1983]
PUBLIC SECTOR-RELATED VARIABLES	
Government Payroll (Paybyexp)	The proportion of government payroll in the general exp. in 1981. [Source: County and City Data Book, 1983]
Labor power (Labor)	It was constructed by combining Z-scored participation percent of of public employees in strikes and Z-scored average duration of the idle days in 1980 [Source: The Bureau of Labor Statistics, Work
Stoppage 8156]	Historical Data Files, 1952-1982, ICPSR
POLITICAL VARIABLES	
Form of Government (Govt8290)	A dummy variable (1=mayorship, 0=others) [Source: County and City Data Book, 1983]
Political support (Lnparty)	The percent of voting for leading party (logged) [Source; State and Metropolitan Area Data Book,1982]

ship factor was a crucial bridging variable between need dimensions such as political activity of municipal employees and percentage of the poor in municipalities and high redistributive policies. In this study, I assume that a strong mayorship with high political support from citizens will expand or cut the budgets.⁶ To measure this assumption, mayorship (forms of government recoded) and voting turnout for leading party were added in the analysis.

2. Some Preliminary Research

1) Fiscal Stress

Before performing the multivariate regression analysis, let's first examine the fiscal state and social conditions of municipalities by analyzing their actual scores. This will help to check the consistency between our current analysis and previous knowledge. But instead of ranking the whole set of cities, we can check whether American largest cities show very severe fiscal stress in a particular year compared with the means of the whole set of cities.

<Table 4> shows the fiscal strain in 16 largest cities. The Table shows a pretty inconsistent patterns of fiscal stress across the cities. Moody's bond ratings are well-known as a measure of the fiscal soundness of local government. As Stonecash and McAfee said, fiscal indices play the most important role in the municipal bond market (Stonecash and McAfee, 1986). As easily imagined, Detroit and Boston, New York and Cleveland, Buffalo, Pittsburgh, and Philadelphia have the worst confidence from the financial community. By and large, the cities located in the State of California and Texas -i.e., Los Angeles, Houston, San Francisco, and Seattle) are financially sound. However, our fiscal stress indicators show diverse patterns across cities.

¹) For the impact of reformism on policies, see Lineberry and Fowler (1967).

< Table 4 > Fiscal Stress in 16 Largest Cities

16 cities	FISCAL DEPENDENCY	TAX BURDEN	DEBT STATUS	MOODY'S BOND RANTING
Atlanta	.66	-2.32(+)	7.62(++)	AA
Baltimore	.42(-)	-2.25(+)	6.72	A1
Boston	.71	-1.78(++)	6.90	BA
Buffalo	.34(-)	-2.70	6.50	BAA
Chicago	.58	-2.98	5.88	A
Cleveland	.76	-2.49	6.25	BA1
Detroit	.63	-2.69	6.20	BA
Houston	.82(+)	-3.10	6.46	AAA
Los Angeles	.95(+)	-2.98	5.68(-)	AAA
Milwaukee	.50	-3.28(-)	6.28	AA
New York	.67	-1.67(++)	7.02(+)	BA1
Philadelphia	.66	-2.24(+)	6.65	BAA
Pittsburgh	.61	-2.98	6.27	BAA
San Francisco	.75	-2.18(+)	7.10(+)	AA
Seattle	.67	-2.99	6.06	AA
St. Louis	.66	-2.30	5.69(-)	BAA1
Total Mean	.65	-2.80	6.33	

* Source: County and City Data Book, 1983, Data Files; ICPSR 8256.

** (+) and (++) represent over 1 standard deviation and 2 standard deviation, respectively, and (-) represents below 1 standard deviation.

Note : Moody's general obligation bond ratings as of September 1982. They range from AAA, which is judged to be of best quality, to BA, which is the worst (AAA > AA1 > AA > A1 > A > BAA1 > BAA > BA1 > BA).

Firstly, when the fiscal dependency of municipal government on state government is considered, Baltimore and Buffalo are the least fiscally dependent cities on intergovernmental revenues from state government, whereas Houston and Los Angeles stand outside of 1 standard deviation from the mean, and thus turn out to be the most dependent cities on the outside source of revenues. At first glance, this is a very unexpected result. As Catherine Lovell pointed out, even growing cities such as Phoenix and Houston have come to rely on intergovernmental revenues (Lovell, 1981:194). So this may not be such a disappointing result as we just felt. Of course, there is a chance that this awkwardness may be derived from one shot cross-sectional research or the imperfection of the fiscal dependency indicator in measuring fiscal stress. The latter inference is harder to claim as we are reminded that many previous studies have used

customarily the indicator. A single study with a small sample seems to be problematic. This may limit our analysis.

Secondly, when we consider how difficult for city governments to expand their tax base is, or how much severe the situation of their tax burden is, we see New York and Boston are in much more difficult situation. Baltimore, Philadelphia, Atlanta, and San Francisco are not as stable with respect to the tax burden borne by city government.

Thirdly, Atlanta appears to be the worst city in the per capita out-standings of city governments. And New York and San Francisco follow Atlanta. Los Angeles has the lowest debt status. Nonetheless, we don't know if this is sound because fiscal dependency will hurt city finances in the long-run. But Los Angeles seems to depend on state aid rather than debt. This indicator shows a similar pattern when tax burden indicator is used.

In a general sense, our three fiscal stress indicators are consistent with Moody's bond ratings with very few exceptions. Among them, the tax burden indicator and debt status indicator, rather than the fiscal dependency indicator, are more congruent with our previous knowledge. Cities with very low municipal bond ratings showed relatively severe fiscal stress. However, it should be noted that Cleveland in the early 1980s seemed fiscally sound, even though its bond rating was very bad. Presumably bond rating does not change easily because a stigma is attached to such a rating. Cleveland defaulted in 1979 and thus it gave the worst image of financial soundness to the municipal bond market. That seems to make the bond rating poorly evaluated.

2) Socio-Economic Conditions

As mentioned above, the Nathan-Adams index (Nathan) or the revised Nathan index (Nathan1) I created for this study reflects the social need of a city. We may think that if the index score of a city is higher, the expenditure of the city government for social welfare will be larger. Presumably, for intercity comparison, the most common measure compares conditions for individual cities with each other, ranking the cities by levels of distress for the measures considered.

<Table 5> shows some interesting differences within 16 largest cities. Although the correlation between Nathan index and expenditure for welfare ($r=.158$, $p=.145$) and the correlation between Nathan1 index and the expenditure ($r=.185$, $p=.104$) are very small and not significant. Some patterns appear at a glance. Above all, as revealed in many similar studies (Burchell and Listokin, 1981 ; Stanley; 1980, Nathan and Adams, 1976), the Northeastern and Midwestern industrial cities have more social needs than the Sunbelt cities. Baltimore shows the expected relationship between social needs and public expenditures for education and health. In the case of Detroit, even though social needs

are high, they are not reflected in the expenditure. By contrast, New York spent more for education and health, although its social needs are high compared with Detroit.

<Table 6> shows that during the 1970s, population has changed greatly in the large cities. The phenomenon of decreasing population is even more salient in the Northeastern and Midwestern industrial cities. That erodes the tax base of the city. By contrast, the population of Houston and Los Angeles has grown. Referred to as a growing city, Houston has a fairly small population for the size of its land and thus the lowest population density among 16 cities. Crime rate is roughly the same in all of large cities.

< Table 5 > Social Needs and Welfare Expenditures

16 cities	EDUC	POVY	CROWD	UNEMP	DEPEND	MONY	NATHAN	NATHAN1	EDUHL
Atlanta	39.8	23.9	6.3	8.1	38.3	27.5	4.86	7.33+	.35
Baltimore	51.6	19.0	5.0	10.8	39.7	22.9	5.30+	7.06+	3.62+
Boston	31.6	16.9	5.2	6.1	34.3	20.2	-1.30	-1.49	3.73+
Buffalo	46.2	17.1	2.1	13.1	40.2	20.7	3.99	4.06	3.68+
Chicago	43.8	17.0	8.1	9.8	39.8	20.3	4.12	4.98	1.62
Cleveland	49.1	18.9	3.3	11.0	40.8	22.1	4.79	5.89+	1.03
Detroit	45.8	19.0	4.8	18.5	42.0	21.9	7.74+	9.99+	2.86
Houston	31.6	10.1	7.7	3.6	35.2	12.7	-3.89	-3.77	1.23
Los Angeles	31.4	13.1	13.0	6.8	35.7	16.4	.20	- .31	.46
Milwaukee	36.4	11.3	3.4	6.9	39.5	13.8	-1.51	-1.66	1.26
New York	39.8	17.3	8.2	7.7	38.4	20.0	2.54	2.52	3.53+
Philadelphia	45.7	16.8	4.2	11.4	40.0	20.6	3.82	4.56	1.94
Pittsburgh	38.9	12.1	2.8	9.2	37.4	16.5	-.73	-.83	.21
San Francisco	26.0	10.4	7.3	6.1	32.5	13.7	-4.49	-5.27	2.80
Seattle	20.3	6.6	2.8	5.9	33.0	11.2	-7.55-	-8.52-	1.55
St. Louis	51.8	16.8	6.9	11.2	43.8	21.8	6.79+	7.99	2.94

Total Mean	35.7	13.8	5.6	7.7	38.2	17.3	.05	.07	1.48
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* Source: County and City Data Book, 1983, Data Files; ICPSR 8256.

** +: over 1 standard deviation

-: below 1 standard deviation

*** Key to Acronyms:

EDUC: The percent of persons twenty-five years of age or more with less than twelfth-grade education in 1980.

POVY: The percent of families below 125 percent of low-income level in 1979 (As of 1980).

CROWD: The percent of occupied housing units with more than one person per room in 1980.

UNEMP: The percent of civilian labor force unemployed in 1982.

DEPEND: The percent of persons less than 18 years of age or over 65 years of age in the total population in 1980.

MONY: Per capita income in 1979.

NATHAN: Nathan-Adams intercity hardship scale calculated by a composite score of Z-scored 6 indicators just described.

NATHAN1: NATHAN + Z-scored percent of black population in 1980.

EDUHL : Logged percent of combined expenditure for education and health and hospitals in the total expenditure of city government in 1981

Total Mean: Mean of all 50 cities.

< Table 6 > Other Socio-Economic Characteristics

16 cities	Population Change	Population Density	Crime Rate	Construction Expenditure
Atlanta	-14.14	.91	9.54+	1.38
Baltimore	-13.14	2.51	9.20	2.89+
Boston	-12.18	3.23+	9.55+	.78-
Buffalo	-22.67-	3.01+	8.91	1.14-
Chicago	-10.81	1.75	8.66-	1.52
Cleveland	-23.58-	2.22	9.27	1.91
Detroit	-20.52-	1.88	9.39+	1.60
Houston	29.31+	-.66-	8.72-	2.03
Los Angeles	5.51	.32	9.21	1.92
Milwaukee	-11.31	1.93	8.85-	2.50
New York	-10.44	2.05	9.24	1.03-
Philadelphia	-13.42	2.21	8.69-	1.18-
Pittsburgh	-18.49	2.63	8.91	2.19
San Francisco	- 5.13	3.46+	9.27	-.03=
Seattle	- 6.97	.86	9.31	2.15
St. Louis	-27.18	2.49	9.53+	1.65
Total Mean	- 1.54	1.21	9.14	1.88

* Source: County and City Data Book, 1983

** (+): over 1 standard deviation; (-) and (=): below 1 and 2 standard deviation, respectively.

3) Public Employee Union Activities

<Table 7> shows the strike activities of public employee unions. In general, labor power is measured by union membership and the number of participants in strikes and duration of strikes. <Table 7> does not give information on union membership,⁷ but this table provides some additional information, including main issues of strikes, interest arbitration as the method of dispute settlement, and union support.⁸ Acco-

¹⁾ Unfortunately I could not gather union membership data for this study. Some previous studies which used the data reported that they gathered the data individually from the Bureau of Labor Statistics.

¹⁾ These three strike activity data were not included in the multivariate analysis because their missing cases were too many.

< Table 7 > Labor Militancy in 16 Largest Cities (1980)

16 cities	Caseno	Tnoidle	Tduratn	Ecoissue	Mediatn	Unisupp
Atlanta	4	374	18	3	1	0
Baltimore	1	573	2	0	1	1
Boston	10	4311	265	6	6	6
Buffalo	2	285	112	2	0	0
Chicago	15	6941	143	12	10	13
Cleveland	7	657	63	5	3	5
Detroit	26	15595	520	22	14	20
Houston	1	400	2	0	1	0
Los Angeles	16	7988	76	16	7	14
Milwaukee	2	200	40	1	1	1
New York	7	33503	24	6	6	6
Philadelphia	19	28015	397	16	16	19
Pittsburgh	14	2413	325	12	9	12
San Francisco	1	279	52	1	1	1
Seattle	4	1548	32	2	2	2
St. Louis	11	3740	158	5	6	10

* U.S. The Dept. of Labor, Bureau of Labor Statistics, Work Stoppage Historical Data Files, 1952-1982, ICPSR 8156.

** Key to Acronyms:

Caseno: The total number of strikes, which last one day or longer in public sector

Tnoidle: The total number of idle public employees in strikes

Tduratn: The total duration days of strikes

Ecoissue: The number of economic issues as the major cause

Mediatn: The number of Mediation in strikes

Unisupp: The number of Union support in strikes

rding to the table, the larger the city, the stronger the labor strength. Economic issues are essentially wage and non-wage compensation disputes as the cause of the strikes. Mediation was included because arbitration may produce outcomes advantageous to public unions (Olson, 1980). In general, strikes broke out with economic issues and obtained union support. In addition, the proportion of mediation exceeded 60 percent. Large cities experienced more public employee union strikes. Moreover, more of their public employees participated in each strike and its duration days were also even longer. From this, some might expect that labor power will contribute more or less to the fiscal stress of the cities. The answer to this hopeful question will be revealed in the multivariate analysis. It is worth while to note that during the year of 1980, while New York City experienced less strikes than other cities such as Detroit, Philadelphia, Los Angeles, Chicago, Pittsburgh, St. Louis, and Boston -- all of them experienced over 10 strikes --,

the average number of participating public employees were the highest among them. This means that labor militancy of New York City might be the strongest among the cities. This would be influenced by government size.

3. The Multivariate Analysis

1) Dispersion of the Variables

It is useful to examine the distribution of the independent variables before turning to the regression analysis. Table 3-8 provides useful statistics -- the means, standard deviations, and the coefficients of variations -- for the comparison of the distribution of each variable. The table also compares the distribution of all selected 50 cities with New York and Cleveland. The coefficient of variation (C.V.), which is just the standard deviation divided by the mean, allows us to compare the relative dispersion of the variables. The larger the magnitude of the coefficient, the more dispersed is the distribution of variables, and vice versa.

The table shows that the distributions of social need dimension (Nathan and Nathan1) and labor power (Labor) are more dispersed than those of others. Population change (Pop8070) is also somewhat more dispersed. By contrast, crime rate and political support for leading party do not vary greatly from city to city. Compared with all 50 cities, New

< Table 8 > The Distributions of the Variables (N=50)

Variables	Mean	Std.Dev.	C.V.	New York	Cleveland
<u>INDEPENDENT VARIABLES</u>					
SOCIO-ECONOMIC					
Nathan	.050	4.882	97.64	2.54	4.79
Nathan1	.069	5.651	81.90	2.52	5.89
Lpopdens	1.211	1.530	1.26	2.05	2.22
Pop8070	-1.540	17.006	-11.04	-10.44	-23.58
Lcrime	9.131	.244	.03	9.24	9.27
Leduhlth	1.477	1.749	1.18	3.53	1.03
Lhighway	1.883	.626	.33	1.03	1.91
PUBLIC SECTOR					
Labor	-.019	1.529	-80.47	-.75	-.44
Paybyexp	4.040	.983	.24	4.19	3.67
POLITICAL					
Lnparty	3.940	-.101	-.02	3.88	3.86
Govt8290	.646	.483	.75	1	1
<u>DEPENDENT VARIABLES</u>					
Strain1	.652	.167	.26	.67	.76
Ltaxburd	-2.801	.362	-.13	-1.67	-2.49
Lperdebt	6.334	.592	.09	7.02	6.25

* Source: County and City Data Book, 1983, Data Files; ICSPR 8256.

** Std.Dev.: Standard Deviation; C.V.: Coefficient of Variation

*** Key to Acronyms:

Nathan : Nathan-Adams Index (Social needs)

Nathan1 : Nathan + Z-scored percent black population in 1980

Labor : Z-scored composite of the percent of public employees who participated in strikes and average duration days of strikes in 1980

(Labor strength)

Paybyexp : The % government payroll in 1981

Leduhlth : Logged percent of combined expenditure of education and health and hospitals in the general expenditure in 1981 (Social welfare)

Lhighway : Logged percent of construction expenditures in 1981

Lpopdens : Logged population density in 1980

Pop8070 : Population change from 1970 to 1980

Lcrime : Logged crimes per 100, 000 population in 1981

Lnparty : Logged voting turnout for leading party (Pol.support)

Govt8290 : Recoded form of city government (1: mayor-council)

Strain1 : The proportion of intergovernmental revenue in the total general revenue in 1981 (Fiscal dependency)

Ltaxburd : Logged local revenue (own source revenue) divided by per capita personal income in 1981 (Tax burden)

York and Cleveland reveal more severe distributions of the independent variables. But as expected, New York is in dire fiscal condition with high expenditure level for welfare, while Cleveland is not so severe, it received a poor Moody's bond rating, as we saw.

2) Correlations

Based on the three different models, from our selected variables, we would expect strong positive correlations with our fiscal stress indicators if the models are true. Therefore, we can hypothesize the relationships between independent variables and dependent variables as given in <Table 9>. The expected signs of correlations were very positive in the models. However, the computed correlation signs were very different from our expectation as shown in <Table 10>.

By and large socio-economic variables showed more significant correlations with fiscal stress indicators than other variables. Yet, the

< Table 9 > Expected Correlation Sign

	FISCAL DEPENDENCY	TAX BURDEN	DEBT STATUS
SOCIO-ECONOMIC			
social needs	+	+	+
pop. density	+	+	+
pop. change	+	+	+
crime rate	+	+	+
welfare exp.	+	+	+
construction	+	+	+
PUBLIC SECTOR			
gov. payroll	+	+	+
labor power	+	+	+
POLITICAL			
mayorship	?	?	?
poli. support	?	?	?

<Table 10> Calculated Pearson Correlation and Its Sign

Variables	FISCAL DEPENDENCY	TAX BURDEN	DEBT STATUS
SOCIO-ECONOMIC			
social needs	-.328*	.446***	-.072
pop. density	-.437***	.381**	.046
pop. change	.378**	-.527***	-.321*
crime rate	.084	.298*	.217+
welfare exp.	-.444**	.468***	.109
construction	.296*	-.602***	-.147
PUBLIC SECTOR			
gov. payroll	.092	.069	-.254
labor power	-.160	-.056	-.226
POLITICAL			
mayorship	-.180	.275*	.089
poli. support	.239	-.331*	-.040

* Calculation method:

FISCAL DEPENDENCY (STRAIN1) : revenue from state aid / general city government revenue x 100

TAX BURDEN (LTAXBURD) : local revenue (own source revenue) / per capita personal income

DEBT STATUS (LPERDEBT) : per cap debt outstanding

+: p < .1 *: p < .05 **: p < .01 ***: p < .001

signs of socio-economic variables were not consistent across fiscal stress indicators. Two political variables were significantly correlated with tax burden indicator. Likewise, their signs of correlations differ : Mayorship was positively correlated with tax burden while political support for the leading party was negatively correlated. So, we may expect that socio-economic variables will have a stronger effect on fiscal stress indicators in the multivariate analysis. Also we may anticipate that political variables will somewhat affect tax burden. Among the significant correlations, the most salient was the correlation between socio-economic variables and tax burden of city government. Debt status indicator was least correlated with all independent variables. In general, there were contrary signs between fiscal dependency and tax burden in all other variables except crime rate and government payroll. Again, there were the same signs between tax burden and debt status in all other variables except social needs and government payroll. Crime rate was positively related with all three fiscal stress variables, even though the significance of the correlations differed.

3) Multiple Regression Analysis

As shown in <Table 11>, when I regressed fiscal dependency indicator on all independent variables (see the full model column), I found the significance only in welfare expenditure. Presumably, such small cases as 50 cities might make a problem, so I excluded some variables using Backwards method. <Table 11> reports the relative influence of the variables on fiscal dependency indicator. Generally, socio-economic variables had stronger effect on fiscal dependency on state aid. The amount of expenditure for welfare such as education and health and population density, in particular, showed statistically significant effects, although they had negative effects. This implies that cities which spend less on welfare cost and have less population with the jurisdiction are exposed to higher fiscal dependency. Some cities as Los Angeles, Tulsa, Phoenix, San Jose, San Diego, etc. belonged to that category. They were often categorized as the Sunbelt cities. This is consistent with our findings in the <Table 4>. The fiscal dependency on state aid is not critical to city government in a short term, but this will hurt the city financially in the long-run.

Viewed on this measure, the explanations founded on public sector militancy or political leadership do not refute the traditional and/or general model of fiscal stress. But we may not reject solely public sector variables in explaining fiscal dependency because we may get a more significant result with more samples. Thus, it is safe to say that government payroll may have influence on fiscal dependency, even though the significance is not so strong. By contrast, political variables are completely insignificant in our analysis.

< Table 11 > Results of the Multiple Regression Analysis for Fiscal Dependency (STRAIN1)

Ind.Var.\Steps	Full	3th	5th	7th
SOCIO-ECONOMIC				
Social needs	-.166	-.152	-.130	
Pop. density	-.371	-.334*	-.328*	-.363**
Pop. change	-.054			
Crime rate	.057	.068	.076	
Welfare exp.	-.480**	-.456**	-.438**	-.477***
Construction ex	-.069	-.066		
PUBLIC SECTOR				
Gov.Payroll	.254	.245	.247	.251
Labor power	-.050	-.050		
POLITICAL				
Mayorship	.007			
Pol. support	-.028			
R2	.417	.417	.413	.393
Adjusted R ²	.260	.312	.339	.352

* : p < .05

** : p < .01

*** : p < .001

Note: The coefficients are standardized regression coefficients (beta).

<Table 12> shows the regression results of tax burden indicator. Again we are disappointed with the result. Socio-economic variables still significantly affect the tax burden of city government. Among them, highway construction expenditure used as a proxy of capital outlays had statistically the most significant effect on tax burden. Welfare expenditure, crime rate, and population change followed. New York City and Boston have the highest tax burden score. Both cities, with declining tax base resulting from outmigration, spent relatively more money on welfare and less on construction. Therefore, based on this result, we can think that cities with the highest tax burden will be the welfare state-

< Table 12 > Results of the Multiple Regression Analysis of Tax Burden (LTAXBURD)
(N=49)

Ind.Var.\steps	Full	2th	4th	6th
SOCIO-ECONOMIC				
Social needs	.120	.105		
Pop. density	-.105	-.065		
Pop. change	-.214	-.208	-.221	-.244*
Crime rate	.286*	.300*	.297*	.286*
Welfare exp.	.364*	.367**	.366**	.318*
Construction exp.	-.360*	-.353**	-.365**	-.361**
PUBLIC SECTOR				
Gov. payroll	-.111	-.098	-.088	
Labor power	-.096	-.081	-.096	
POLITICAL				
Mayorship	-.048			
Pol. support	-.069			
R2	.607	.604	.595	.580
Adjusted R2	.501	.522	.535	.541

* : p < .05

** : p < .01

*** : p < .001

Note : The coefficients are standardized regression coefficients (beta).

oriented large cities with high crime rates.

Next, considering the debt status of the cities, what would affect these most significantly? <Table 13> gives the answer. We see some interesting results, here. Socio-economic variables have strong effects, but the most important are population change and social needs. A public sector variable, labor power also has some effect on debt status. Based on this result, we may think if the population percent change of a city during the 1970s, social needs, and labor power are all relatively low, the city will be the highest debt-borrower. Atlanta, New York, and San

< Table 13 > Results of the Multiple Regression Analysis of Debt Status

Ind.Var.\steps	Full	3th	5th	7th
SOCIO-ECONOMIC				
Social needs	-.032	-.139*	-.287	-.306*
Pop. density	-.165			
Pop. change	-.365	-.303	-.419*	-.490**
Crime rate	.237	.233	.166	
Welfare exp.	.174	.196		
Construction exp.	-.188	-.140		
PUBLIC SECTOR				
Gov. payroll	-.276	-.274	-.168	
Labor power	-.234	-.261	-.256	-.273*
POLITICAL				
Mayorship	-.025			
Pol. support	-.038			
<hr/>				
R2	.354	.342	.292	.241
Adjusted R ²	.180	.227	.207	.189

* : $p < .05$

** : $p < .01$

Note: The coefficients are standardized regression coefficients (beta).

Francisco will be assigned to them. This fact is congruent with the analysis of <Table 14>.

Next when I regressed fiscal stress indicators on only significant variables with interaction terms. As shown in <Table 14>, there were no significant interaction terms. And the results were almost the same with the regression results without interaction terms, meaning, by and large, socio-economic variables had significant effects on fiscal stress indicators.

< Table 14 > A Reduced Form of the Multiple Regression with Interaction Terms

Variables	Fiscal Dependency	Tax Burden	Debt Status
SOCIO-ECONOMIC			
Social Needs			-.301*
Welfare Expenditure	.320*	.037	
Population density	-.381**		
Construction Expenditure			-.506*
Population Change		2.238	-.503**
Crime rate		.288*	
PUBLIC SECTOR			
Government Payroll	.372		
Labor power			-.258
INTERACTION TERMS			
Payroll × Welfare Exp.	-.828		
Welfare × Construc.Exp.			.257
Pop.Change × Crime rate		-2.448	
R ²	.372	.629	.241
Adjusted R ²	.315	.576	.192
N	49	49	50

* P < .05

** p < .01

Note : The coefficients are standardized regression coefficients (beta).

V. Discussion and Conclusion

This study tried to incorporate different approaches or models into one multivariate analysis and tested them. As we have seen, there were significant variations among the effects of independent variables on fiscal stress indicators. In general, in our analysis, socio-economic model still has more explanatory power than public sector model or political leadership model. But in some fiscal stress dimension, we observed that public sector models serve to explain some fiscal stress. Thus, we can not argue with a strong tone that socio-economic model is more plausible. If we had more samples or if we have used the concept of time change instead of one-year cross-sectional study, we might have somewhat different results. This is only a one-shot cross-sectional study and thus does not account for the variation resulting from time change as argued by some authors (Morgan and England, 1986).⁹ Probably, a better model will

¹) see Rodgers and Straussman (1986). But Clark and colleagues use one-shot cross-sectional study.

incorporate the three different models into a unified path model and measure their direct, indirect, and total effects. But the most severe weakness lies in the fact that quantitative analysis does not account for historical idiosyncrasy of the particular cities, resulting from regionalism, socio-demographic composition, legal and political structure, or administrative rules and practices. And to get a more complete explanation, we need to combine historical case studies with quantitative analysis in a comparative political economy (Evans and Stephen, 1988; Ragin, 1987). Therefore, some historical case studies of fiscal crisis will be the next job.

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