

|FINANCING URBAN SCHOOLS/: PREDICTING FISCAL
STRESS IN LARGE CITY SCHOOL DISTRICTS

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ABSTRACT

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Many large urban school districts in the United States have suffered from fiscal stress, while others have not. Fiscal stress often has led to program cutbacks, layoffs, and decline in the quality of educational services.

The purpose of this research study was to examine the predictors of fiscal stress in large urban school districts and to develop a method for predicting fiscal stress. A variety of demographic, economic, financial, governance, and geographic variables were used.

The study found a number of variables that were significantly related to large urban school district fiscal stress and produced a model for predicting fiscal stress.

DEDICATION

I dedicate this research study to my wife

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CHAPTER I
INTRODUCTION

At the turn of the twentieth century urban school districts held a preeminent place in American education. City school districts pioneered educational innovation and represented the most up-to-date in educational practice. Upwardly mobile teachers and school administrators aspired to position in these "lighthouse" central city school districts. By the time of the Second World War this all began to change. The large city school districts were beset with problems and they began to lose their preeminent position to school districts in wealthy, suburban communities. City school districts suffered from financial neglect at the very same time they received tens of thousands of new students who required special attention and programs. The situation that had existed in 1900 had changed enough that one writer in 1982 described city school districts as follows:

They appeared at times profligate in expenditure per pupil, defective in educational performance, and derelict in compliance with civil rights laws. More than a few were sluggish

in achieving the retrenchment and reform needed to restore credibility and respect in the eyes of the general public.^{1/}

The general decline of city school districts has been described by another writer as

a long-standing, and therefore familiar and accepted, societal tragedy. Moreover, the problem of student failure in central-city schools has been aggravated in recent years by the worsening financial condition of large U.S. cities.^{2/}

The precarious financial situation in major cities became an established fact.

The financial condition of many urban school districts was brought to the forefront of public policy discussion with the fiscal crisis in New York City in 1975. The initial impact of the New York City fiscal crisis was a reduction in the city workforce of 48,000 in 1975 and the loss of jobs by 15,000 teachers and paraprofessionals.^{3/} After retirements and resignations were taken into account,

1

Joseph M. Cronin, "Financing Urban Schools," in The Changing Politics of School Finance, ed. Nelda H. Cambron-McCabe and Allan Odden (Cambridge, Mass.: Ballinger Publishing Co., 1982), p. 211.

2

Charles S. Benson, "Financial Alternatives for Urban School Districts," Phi Delta Kappan (April 1982), p. 530.

3

William K. Tabb, "Blaming the Victim," in The Fiscal Crisis of American Cities, ed. Roger E. Alcala and David Mermelstein (New York: Vintage Books, 1977), p. 321.

seven thousand teachers were actually terminated.^{4/} Such massive layoffs had a devastating effect on the New York City public schools and marked another step in the decline of that once proud school system.

The nation's second largest city experienced a major crisis in its school system in late 1979. The Chicago school financing crisis reached a climax when the district missed a teacher payroll on Christmas Eve. The teachers remained on the job, but engaged in a strike in early 1980. A result of the teacher's strike was to reduce teacher layoffs from a planned 3000 to 2300. These and other cutbacks had a negative impact on the Chicago schools' education program.^{5/}

Large urban school district financial crises also occurred in Cleveland, Detroit, and Philadelphia in the late 1970s and early 1980s. By 1984, the San Jose, California school district had declared formal bankruptcy. One fact that remains clear in these urban school district financial crises is that the school districts undergoing

⁴ Joseph M. Cronin, Big City School Bankruptcy, Policy Paper No. 80-C3 (Stanford, Calif.: Institute for Research on Educational Finance and Governance, Stanford University, 1980), p. 6.

⁵ Cronin, Big City School Bankruptcy, p. 11.

crisis have all suffered from personnel layoffs and program cutbacks. In addition, a large number of urban school districts have experienced a decline in educational quality, are perceived as not meeting the needs of urban children, and are losing public support.^{6/}

According to Cibulka, between 1974-75 and 1980-81 school expenditures in constant dollars actually declined in Atlanta, Baltimore, Boston, Chicago, Los Angeles, Milwaukee, New Orleans, New York, and Seattle and per pupil expenditures in constant dollars declined over the same period in Atlanta, Chicago, and New York. Over the same period school expenditures had increased in Dallas, and per pupil expenditures increased in Baltimore, Boston, Dallas, Los Angeles, Milwaukee, New Orleans and Seattle.^{7/} While few urban school districts were in good financial condition, some suffered more than others.

Almost all major urban school districts have suffered from enrollment decline and financial problems. However,

6

Katherine Bradbury, Anthony Downs, and Kenneth A. Small, Urban Decline and the Future of American Cities (Washington, D.C.: The Brookings Institution, 1982), p. 188 and p. 284.

7

James G. Cibulka, "Response to Enrollment Loss and Financial Decline in Urban School Systems," Peabody Journal of Education, 60, No. 2 (Winter 1982), p. 67.

some of these school districts have managed to cope with these problems while others have experienced major crises. Not all major urban school districts have experienced fiscal crisis. Some urban school districts manage to remain solvent while others teeter on the brink of bankruptcy.

Purpose

The purpose of this study is to investigate the predictors of fiscal crisis in urban school districts and to determine what factors distinguish why some urban school districts experience fiscal crisis and others do not. The study answers the question of what distinguishes large city school districts which have severe financial problems from those which do not.

Since the 1975 New York City financial crisis, volumes have been written on the causes of fiscal stress and financial crisis. These studies have cited demographic, socioeconomic, political, and management factors as causing fiscal stress and have blamed particularly high proportions of minority populations, swollen welfare roles, exorbitant municipal employee union settlements, interest group politics, and poor fiscal management as contributing to the

fiscal downfall of major cities.^{8/} As replete as the literature on urban fiscal stress has been, the research literature on the financial problems of urban school districts has been sparse.^{9/}

This study examines the literature both on urban fiscal stress and on urban school district fiscal stress in an attempt to determine what has been learned about the predictors of financial problems in city school districts. From this literature review emerges a methodology for testing the various theories of fiscal stress and determining what factors predict why some city school districts are fiscally stressed and others are not.

The Research Question

This study specifically addresses the question of what factors distinguish large urban school districts which have experienced fiscal stress from large urban school districts which have not.

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See Joan K. Martin, Urban Fiscal Stress: Why Cities Go Broke (Boston, Mass.: Auburn Housing Publishing Co., 1982), Chapter 1, for an overview of the various theories of the causes of urban fiscal stress.

9

Cibulka, p. 64.

Defining the Study

An inherent problem of studying or discussing fiscal stress is the lack of a common definition of what constitutes fiscal stress. Martin defines fiscal stress as the imbalance between revenues and expenses, which she calls "revenue deficits."^{10/} Stanley describes fiscal stress as a condition where a city has neither the cash nor the credit to meet current expenses.^{11/} Clark and Ferguson, who use the term fiscal strain rather than fiscal stress, define strain as the degree to which city spending and debt are adapted to private sector resources.^{12/} However, for the purposes of this study the most satisfactory operational definition is provided by Bradbury who points out that fiscal stress is not just an imbalance in the current account budget, but also contains the element of an inability to honor financial commitments. She observes that "the bond market is the only place cities

10

Martin, p. 1.

11

David T. Stanley, "Cities in Trouble," in Managing Fiscal Stress: The Crisis in the Public Sector, ed. Charles H. Levine (Chatham, N.J.: Chatham House Publishers, Inc., 1980), pp. 95-122.

12

Terry Nichols Clark and Lorna Crowley Ferguson, City Money: Political Processes, Fiscal Strain, and Retrenchment (New York: Columbia University Press, 1983), p. 6.

regularly face a direct market assessment of their capacity to perform"^{13/} Bond ratings provide a direct assessment of how the financial community views the ability of a local government to honor its financial commitments and to repay its debts on time. In this context, Cronin agrees with Bradbury when he defines fiscal stress as "the point at which cities or at least city school systems learn that they cannot borrow any more money on their own good name."^{14/} The Bradbury-Cronin definition of fiscal stress is used in this study. Specifically, large urban school districts will be considered to be fiscally stressed if their bond ratings are such that they either cannot borrow money in regular financial markets or can only borrow money at such prohibitively high interest rates that borrowing is practically impossible. Using the bond rating system employed by Moody's Investors Service, Inc., city school districts are considered fiscally stressed if they have below investment grade ratings of B or Ba, or if they have medium grade credit quality ratings of Baa. While a school

13

Katherine L. Bradbury, "Fiscal Distress in Large U.S. Cities," New England Economic Review, (November/December 1982), p. 34.

14

Cronin, Big City School Bankruptcy, p. 1.

district with a Baa rating can borrow money, the interest rates are generally prohibitively high to do so. School districts with bond ratings of A, Aa, or Aaa enjoy upper-medium to high grade credit quality and are not considered to be fiscally stressed. Thus, this study will examine those factors which distinguish large urban school districts with Baa or lower bond ratings from those with A or higher bond ratings.^{15/}

Significance of the Study

If urban school districts suffering from fiscal stress and those wishing to avoid fiscal stress do not know what factors are associated with fiscal stress, they are at a severe disadvantage in trying to regain or maintain financial solvency. The significance of this study is that it provides relevant information on the predictors of fiscal stress in some of our nation's largest city school districts. There is a practical need to know why some city districts have severe financial problems while other districts facing similar conditions do not. As Berny

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The general methods employed by Moody's Investors Services, Inc. to rate the credit worthiness of state and local governmental units is described in Wade S. Smith, The Appraisal of Municipal Credit Risk (New York: Moody's Investors Services, Inc., 1979).

concluded in his study of financially troubled and non-troubled rural school districts in Ohio, "still unanswered is the question of why some districts, in the same economic climate, become troubled while others do not."^{16/} Berny comments that the importance of the answer to this question is that if the factors associated with financial stress are understood, then we would have a better idea of how to fashion state and local policies to avoid financial troubles in school districts.

Education policymakers generally do not clearly understand the correlates of urban school district fiscal stress. The Advisory Commission on Intergovernmental Relations (ACIR) has observed that disparities in per capita expenditures remain a problem for large American cities even though a considerable amount of state and federal aid has been provided to the cities in the last decade and a half.^{17/} In a situation of limited resources,

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Charles A. Berny, "Selected Variables as Discriminators Between Financially Troubled and Non-Troubled Rural Ohio School Districts," Journal of Education Finance, 7 (Spring 1982), p. 482.

¹⁷

Advisory Commission on Intergovernmental Relations, Central City-Suburban Fiscal Disparity and City Distress, 1977 (Washington, D.C.: Government Printing Office, 1980), p. 17.

knowledge is needed about how to use those resources in the most effective and efficient manner. This study provides insight into the predictors of urban school district fiscal stress and offers relevant information on how federal and state policies might be fashioned to improve the fiscal health of stressed urban districts and, by extension, assist in improving the quality of educational services provided by urban schools. Goertz has noted that urban school districts are increasingly turning to the courts for relief from their fiscal problems and suggests that the outcomes of these court cases will set the education finance agenda of the 1980's.^{18/} This study of urban school district fiscal stress can provide the basis for public policies which will redress the problems which cause city school districts to go to court and offer a rational basis for restoring balance to the political economy of urban schools.

18

Margaret Goertz, "School Finance Reform and the Cities," in Perspectives in State School Support Programs, ed. K. Forbis Jordan and Nelda H. Cambron-McCabe (Cambridge, Mass.: Ballinger Publishing Company, 1981), p. 140.

CHAPTER II

REVIEW OF THE LITERATURE

Much has been written about the financial problems of U.S. cities over the last decade. The near financial collapse of New York City in 1975 motivated many writers to probe the financial condition of major American cities to find the underlying cause of these problems. Many studies documented the long term economic decline of large cities that had begun decades before the crisis in New York and continues through the present. Those studies are of interest to those researching the general economic and social malaise that has afflicted most large American urban centers, but they do not tell why some of those cities suffer from fiscal stress while others do not.

Most of the literature on urban fiscal stress deals with general city governments, but a slowly emerging body of research literature on school district fiscal stress exists. Many of the school district fiscal stress studies are concerned with the management of decline. This chapter will review the relevant literature on the causes

of urban fiscal stress and school district fiscal stress and present the pertinent findings. Generally, the causes can be grouped in a number of broad categories and the discussion of the studies will be organized around those categories. These groups include demographic causes, focusing on changes in population, population composition, and public service client populations in cities; economic base causes, relating to deteriorating economic and tax bases; fiscal causes, which include changes in federal aid, tax effort, fiscal retrenchment efforts, and salary, fringe benefit, and pension costs; management-administrative causes, which concentrate on poor fiscal management and questionable financial practices; and environmental causes, such as federal and state legislative and judicial mandates.

Urban Fiscal Stress

Those who have studied urban fiscal stress seldom cite a single cause of the financial problems facing cities, but see the fiscal stress as emanating from a variety of factors. The major causes are discussed here.

Demography

Martin summarizes the demographic argument as follows:

The traditional argument in this group of studies centers on the flight of the middle class to the

suburbs that leaves the center city with lower-income residents, a socioeconomic group with a higher demand for services.1/

Piven elaborates on this argument by saying that the widely accepted view of urban fiscal stress is that big cities have been troubled by an increasing proportion of black and minority residents and that

The large number of impoverished Southern black migrants to the cities presumably requires far greater investments in services, including more elaborate educational programs, more frequent garbage collection, more intensive policing, if the city is to be maintained at accustomed levels of civil decency and order. Thus, city agencies have been forced to expand and elaborate their activities.2/

The demographic argument centers around the effects of the population shifts that have been occurring in large cities over the past few decades. Such cities have been becoming more black and Hispanic and these population groups, because of their generally low income levels, require a higher level of services which are costly to the city government. According to this theory, those cities with the greatest increase in minority population would be suffering the greatest fiscal stress.

1

Martin, p. 15.

2

Frances Fox Piven, "The Urban Crises: Who Got What and Why," in Alcaly and Mermelstein, pp. 132-133.

Studies of school district fiscal stress present a similar argument. Cibulka, for example, argues that the increase in poor, non-white students from poverty backgrounds and the educationally disadvantaged led to increased pressures for higher school expenditures for compensatory education programs, programs for the handicapped, and special educational services for the limited English proficient.^{3/} Hentschke and Yagielski cite enrollment declines in general as contributing to fiscal stress through (1) increasing fixed costs per pupil, (2) decreasing staff/pupil ratios, (3) increasing salary bracket creep, and (4) causing district wealth bracket creep.^{4/}

Cronin further argues that the lack of response to declining enrollments was a major factor in the near bankruptcy of public school systems in New York, Chicago, and Cleveland.^{5/} Boyd stated this same argument forcibly when he wrote,

³
Cibulka, p. 75.

⁴
Guilbert Hentschke and John Yagielski, "School District Fiscal Strain: Implications for State and Federal Financial Assistance," Journal of Education Finance, 8 (Summer 1982), p. 57.

⁵
Cronin, Big City School Bankruptcy, pp. 20-21.

The most serious consequences of declining enrollments have been felt in large urban school districts, where delay in action on the problem has contributed to program deterioration, fiscal strain, and even in a few cases to bankruptcy and receivership.^{6/}

The connection between enrollment decline and changing school populations on one hand and fiscal stress on the other hand has been clearly stated in the literature.

Demographic factors probably have been the most prominent factors cited in explaining fiscal stress in both cities and city school districts. Declining populations increase fixed costs and leave cities and city school districts with high cost clients to serve. Combined with a declining economic base, such demographic changes can create financial difficulties.

Economic Base

Not only do cities have greater demands on public services, but their ability to provide those services has declined. The tax base of major urban cities has been eroded. Cities once had a clear superiority over surrounding suburbs and smaller municipalities in real property value per resident, retail sales, personal income,

6

William Lowe Boyd, "The Politics of Declining Enrollments and School Closings," in Cambron-McCabe and Odden, p. 252.

and other bases from which city revenue could be derived.

The current situation has been described as follows:

the advantage the cities now seem to have in revenue raising ability are rapidly eroding, just when their needs for additional revenue seem to be rising most rapidly. Property values, sales, and incomes, which are the ultimate source of local government revenues, are growing far faster in the suburbs than in the cities.^{7/}

A partial cause for this shift is the spreading out of the American population, with population moves from the North to the South and West and from large cities to suburbs, smaller cities, and rural areas. As Terry Nichols Clark has noted in his overview of urban fiscal strain, these trends are likely to continue through the 1980s and beyond, and there is little that individual cities can do to reverse these trends.^{8/}

For city districts, Goertz has listed limited fiscal capacity as one of the four dimensions of urban school

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Charles L. Schultze, Edward R. Freed, Alice M. Rivlin, Nancy H. Teeters, and Robert D. Reischauer, "Fiscal Problems of Cities," in Alcaly and Mermelstein, p. 203.

8

Terry Nichols Clark, "Urban Fiscal Strain: Trends and Policy Options," in Financing State and Local Governments in the 1980s, ed. Norman Walzer and David L. Chicoine (Cambridge, Mass.: Oelgeschlager, Ginn, and Hain, Publishers, Inc., 1981), p. 4.

finance problems^{9/} and Murphy found limited fiscal capacity to be one of the factors characterizing financially troubled school districts in his study.^{10/} The deterioration of the economic base has the same effect on tax capacity in city school districts as it has for city governments. If a city school district has a heavy dependence on locally generated tax revenues, the district will have greater problems resulting from an eroding economic base.

Fiscal Policies

Specific fiscal policies at the local, state, and national levels have been cited as causal factors in urban fiscal stress. Mollenkopf^{11/} and Tabb^{12/} discuss those observers of fiscal crisis who blame the fiscal problems of cities on profligate spending policies and living beyond the means of the taxpayers. This became a common and

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Goertz, p. 114.

10

Joseph F. Murphy, "A Statistical Analysis of Ohio's Financially Troubled School Districts," Educational Evaluation and Policy Analysis, 5 (Spring 1983), p. 116.

11

John M. Mollenkopf, "The Crisis of the Public Sector in America's Cities," in Alcaly and Mermelstein, pp. 113-114.

12

Tabb, p. 315.

popular explanation for the New York City fiscal crisis and for subsequent near collapses of Yonkers, Cleveland, and Chicago. It became easy to point the finger at "welfare chislers" and "fat cat union settlements" for the fiscal plight of the cities. Mollenkopf agrees that local fiscal policies have played a major role in urban fiscal problems, but he offers a different perspective on this popular view:

not only did the poor people and public workers who are being blamed for it not play an active role in creating the crisis, they hardly understand it. They understand only its tragedies. However, not only do leaders of dominant city agencies, banks and corporations understand such arcane matters as "rolling over" bonds, evaluating program effectiveness and financial juggling, they invented them. While the current crisis involves public welfare functions and the public work force, its roots can be traced back to the political/economic strategy which created the need for tricky financing and enlarged bureaucracies.13/

This view shifts the emphasis from city employees and city service clients to those who manage and make decisions about city financial policies.

Other writers have listed changes in federal policies,

13

Mollenkopf, pp. 113-114.

including diminution of federal aid to cities,^{14/} and state and local fiscal retrenchment policies^{15/} as causes of urban fiscal stress. As with some of the other potential causes of fiscal stress which have been discussed, these factors seem to explain general financial distress among all cities more than specific fiscal stress conditions in particular cities.

Bradbury looks at particular results of city fiscal policy in assessing fiscal stress, including current account deficits, short term debt as a proportion of total revenue, and debt service costs as a proportion of revenue.^{16/} While these indicators do not suggest blame on particular municipal actors, they do identify the consequences of fiscal actions which place a city in financial difficulty. These factors may show when a city

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Philip M. Dearborn, "Urban Fiscal Stress," in State and Local Government Finance and Financial Management: A Compendium of Current Research, ed. John E. Petersen, Catherine Lavigno Spain, and Martharose F. Laffery (Washington, D.C.: Government Finance Research Center, 1978), pp. 161-162; Clark, p. 3; Cronin, "Financing Urban Schools," pp. 222-224.

15

Clark, p. 3.

16

Bradbury, p. 36.

may be in trouble, but further analyses are necessary to determine the causes of that difficulty.

Management Policies

Closely related to the issue of fiscal policies as a cause of urban fiscal stress is the issue of management policies. One cause for financial trouble in cities and city school districts has been cited as financial mismanagement. Dearborn writes that any study of fiscal stress must consider the effects of both politics and management deficiencies.^{17/} Behn notes that managers make choices and these choices are important. When addressing the question of what distinguishes a school district which gets into trouble from one that does not, Behn responds, "The answer is, I think, quite simple. The answer is management."^{18/} In his study of urban school district financial crisis Cronin specifically cites use of fiscal gimmicks, questionable use of debt instruments, and general

17

Dearborn, p. 161.

18

Robert D. Behn, "The Managerial Opportunity of Enrollment Decline," Peabody Journal of Education, 60 (Winter 1983), p. 108.

use of bad financial management techniques as major contributory factors in the near bankruptcy of the New York and Chicago public school systems.^{19/}

Former New York State Special Deputy Comptroller for the City of New York Sidney Schwartz described the New York City situation in this manner:

Instead of addressing this strain directly, the city acted as if it was a routine annual problem, which could be accommodated easily. It embarked on large, but poorly planned projects and, in the process, neglected maintenance of the city's infrastructure. It entered into generous contract agreements with its many municipal employee unions. And since none of these actions produced revenue or could limit expenditures for very long, the city resorted to a range of deceptive accounting gimmicks, some with the implicit or explicit authorization of the state. Looking back, one is surprised not by the fact that the city nearly went bankrupt, but that it was able to conceal for so long the extent of its rapidly deteriorating fiscal condition.^{20/}

Behn considers the hypothesis that poor management is the cause of financial problems to be untestable.^{21/} However, there seems to be powerful evidence that poor management

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Cronin, Big City School Bankruptcy, pp. 2-5.

20

Sidney Schwartz, "New York City's Fiscal Crisis: How It Developed - Why It Persists," City Almanac, 15 (October 1980), p. 5.

21

Behn, p. 108.

practices contribute to fiscal stress in some instances.

Environmental Factors

Finally, there are various environmental factors which are cited as contributing to fiscal stress. These are typically actions outside of the control of the city or city school district which nonetheless have an impact on local activities and policies. The most common are federal and state legislative actions and court decisions. Hentschke and Yagielski discuss how such external environmental factors as federal handicapped legislation, state instructional program mandates, and statutes and court decisions on instruction, personnel practices, student rights, physical plant, and support services can alter dramatically local district expenditure patterns and contribute to fiscal stress.^{22/} They lessen the control that local policymakers have over their own budgets and create pressures for additional spending.

Cronin attributes, as contributory factors to school district fiscal stress, court mandates in areas like

22

Hentschke and Yagielski, pp. 60-63.

education of handicapped children, bilingual education, school finance reform, and school desegregation.^{23/} He also cites court ordered desegregation as an important factor in the development of financial problems in both Cleveland and Chicago.^{24/}

Another kind of environmental factor merits attention. Whatever financial problems cities and city school districts already may have been experiencing, these problems certainly were exacerbated by major national economic recessions in 1974-75 and in the early 1980s. While these recessions have had a detrimental effect on all local governments, their effect particularly has been severe on older urban centers that have suffered from unusually high unemployment rates and depressed economic activity.

Finally, Cronin documents another external environmental factor which has had a major, detrimental effect on urban school finance - the massive build up of federal programs of financial aid for elementary and secondary education during the 1960s and 1970s and their

²³

Cronin, "Financing Urban Schools," pp. 222-223.

²⁴

Cronin, Big City School Bankruptcy, pp. 3-5.

cutback under the Reagan Administration. Cronin maintains that this has led to financial instability in urban school districts and contributed to fiscal stress.^{25/} Urban school districts have been hit hardest because they contain the highest concentrations of the special needs students assisted by federal categorical programs. Particularly disadvantaged were city school districts like St. Louis and Buffalo that had received large amounts of desegregation assistance funding.

Studies on Fiscal Stress

The separate causes of urban fiscal stress and urban school district fiscal stress listed above provide insight into the evolution from fiscal health to fiscal stress. However, to understand thoroughly the fiscal condition of cities and city school districts, one must look at the relevant studies that have been completed and what they have concluded are the various causes of fiscal stress. This section will review some important studies on urban fiscal stress and urban school district fiscal stress.

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Cronin, "Financing Urban Schools," pp. 223-224.

Urban Fiscal Stress

In 1978, Philip M. Dearborn reviewed the research to date on urban finance. He concluded that there was still lacking at that time a clear understanding of the causes of urban fiscal stress and that a lack of uniform and timely financial reporting data posed serious problems for statistical studies of the phenomenon.^{26/} Nonetheless, a number of statistical analyses have been attempted, the most noteworthy of which is the study of sixty-six cities done jointly by the First National Bank of Boston and Touche Ross, a major accounting firm.^{27/} This study listed in detail various financial and demographic data on the cities studied, but the analysis of those data did not produce a useful paradigm for understanding the causes of urban fiscal stress.

In 1976, Terry Nichols Clark and his colleagues at the University of Chicago published one of the seminal studies

26

Dearborn, pp. 162-163.

27

James M. Howell and Charles F. Stamm, Urban Fiscal Stress: A Comparative Analysis of 66 U.S. Cities (Lexington, Mass.: Lexington Books, 1979).

on urban fiscal stress, which described fiscal stress as a combination of economic and social factors and poor fiscal management.^{28/} In 1981, Clark presented the results of his updated research on the topic.^{29/} Clark suggested that urban fiscal stress has been and continues to be the result of a movement of population and jobs, a slowdown in federal aid, and state and local fiscal retrenchment, but he emphasized that while these all restrain local decision-making, they do allow local officials some policy options. He particularly stressed that a city can engage in "self-development" through investment in its own capital infrastructure and basic services, which will in turn stimulate economic development.

Clark defined fiscal strain as "the degree to which municipal expenditures and debt are adapted to the city's private sector resources," and expressed it graphically as follows:

28

Terry Nichols Clark, Irene S. Rubin, Lynne C. Pettler, and Erwin Zimmerman, How Many New Yorks? - The New York Fiscal Crisis in Comparative Perspective (Chicago: Comparative Study of Community Decision-Making, University of Chicago, 1976).

29

Clark, "Urban Fiscal Strain: Trends and Policy Options," pp. 3-18.

$$\text{Fiscal strain} = \frac{\text{Municipal expenditures or debt (causes 1)} \quad \underline{30/}}{\text{Private sector resources (causes 2)}}$$

One set of causes alone does not cause fiscal strain, but only the two working in combination. For example, Clark argued that population or job losses alone do not cause strain, but that a city becomes fiscally strained only when expenditure and debt policies get out of balance with the private sector resources of the city. In a study of 62 cities, Clark found that private sector resource measures were not strong determinants of city fiscal policy (population and economic base measures explained no more than 31 percent of the variance in the expenditure and debt measures.)

Clark concluded that changes in private sector resources are influenced largely by national economic trends, although local governmental leaders do have a modest influence on them in the short term. By contrast, municipal spending and borrowing policies are locally determined and are influenced by:

1. the preference of voters concerning spending
2. political activity by organized groups

3. preference of and policies pursued by elected officials
4. legal authority of public officials.^{31/}

The lesson that Clark gleaned from this is that local officials need to monitor fiscal conditions more closely and to engage in management improvements and efficiencies to keep city spending in balance with the city's private sector resources. Clark clearly accepts the theory that the causes of fiscal stress largely lie in lack of effective leadership and management in urban centers.

Clark stated that his approach concentrates

on trends and policy options most directly important for local officials and their friends... (and) stresses that a critical part of leadership is to recognize what one can and cannot change, and to allocate resources appropriately.^{32/}

Clark, thus, rejected the purely quantitative approaches to describing and predicting fiscal stress.

In a subsequent work, Clark and Ferguson stressed the need to develop an integrated model of fiscal stress incorporating fiscal output and private resource variables

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Clark, pp. 12-13.

32

Clark, p. 3.

in refined equations.^{33/} They conclude that fiscal strain among city governments could be eased through intergovernmental aid from federal and state governments with the following qualifications:

1. More funds should be available through general grants,
2. Relatively fewer funds should be available through categorical grants,
3. Regulations should be simplified,
4. More technical assistance should be available to cities,
5. Access to bond markets should be facilitated.^{34/}

Clark and Ferguson have stressed the need for the local city leadership to solve fiscal problems through the political process with fiscal policy set through citizen preferences. They see the advantage of their approach and proposed policies in the fact that

they provide more leeway for local officials. Higher-level governments are better placed to tap certain resources, but no one can better solve problems of cities than cities themselves.^{35/}

³³

Clark and Ferguson, City Money.

³⁴

Clark and Ferguson, p. 255.

³⁵

Clark and Ferguson, p. 261.

Higher level governments can expand the resources available to cities, but local political leadership, according to Clark and Ferguson, needs to pursue corresponding fiscal policies which will meet citizen preferences and not outspend available resources.

Martin examined the quantitative approach to analyzing urban fiscal stress and found it wanting.^{36/} She first constructed an econometric model similar to those used by other researchers to predict urban fiscal stress. She used 1970-71 data to try to predict 1974-75 fiscal problems. Variations on the model were employed to try to explain differing phenomena that other researchers found to be significant. The only variables found by Martin to be significant predictors of urban fiscal stress were disposable income and debt per capita, and these were not very powerful predictors. Commonly accepted predictors of fiscal stress such as percentage of population with low incomes, percentage non-white, and regional locations were not found to be significant.^{37/}

³⁶ Martin, Urban Financial Stress: Why Cities Go Broke.

³⁷ Martin, pp. 10-11, pp. 149-164.

Martin turned to accounting and audit data for an explanation of the causes of fiscal stress. She tested her theory of revenue variability as the cause of stress through detailed analysis of Detroit and Boston. Martin summarized her conclusions as follows:

Counter to popular theory, the origins of fiscal strain were found to be on the revenue side, emanating from the accounting structure itself and from the people who record the financial information. Disaggregating the budget into revenue and expense deficits showed that cities do, indeed, have different problems from the traditional explanation of "management spends." Both Boston and Detroit have severe revenue deficits, but each has a different type: Boston suffers from a tax deficit and Detroit's problem is a transfer deficit. Both cities lack of revenues had previously been attributed to overspending and to socioeconomic, fiscal, and demographic factors, which serve as a basis for the conventional wisdom of understanding fiscal strain.^{38/}

By disaggregating the city budget into four major components: taxes, transfers, debt, and appropriations, Martin traced city finances over a period of years. She found that fiscally stressed cities got into trouble through faulty accounting practices, revenue misestimates, unwise borrowing practices, inflating assets on financial

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Martin, p. 129.

statements, and other very questionable financial management practices used to delay coming to grips with revenue shortfalls. Dealing with problems was delayed until a day of financial reckoning became unavoidable. Martin found that contrary to the popular perception that financial crises suddenly emerged, the financial difficulties of the cities she studied could be seen developing many years before they appeared in the newspapers and on the television screen.

Dearborn pointed out the lack of uniform and timely financial reporting data that hampered most statistical analyses of urban fiscal stress. Clark, likewise, rejects the purely quantitative approach to fiscal stress analysis and suggests that the key to understanding fiscal stress may lie in the management practices of the city. Martin develops that line of thinking further by showing that quantitative, econometric models are weak predictors at best of fiscal stress and develops a methodology based on accounting theory to explain urban fiscal stress.

School District Fiscal Stress

The first major study of school district fiscal stress was Joseph M. Cronin's study of near bankruptcy of the

school systems in New York, Cleveland, and Chicago.^{39/} Cronin used a qualitative, historical approach to examine what had transpired in these three city school districts to bring them to the edge of the financial abyss. He found that there were more similarities than differences in the conditions found in the three districts. Cronin concluded that the causes of the New York, Cleveland, and Chicago financial problems were the combination of the following:

1. It is very difficult and unpopular to raise property taxes for city schools.
2. It is very painful to close down individual school buildings, especially in cities where custodial unions have substantial strength and often assist city political leaders with election campaigns.
3. It is very tempting to try to "finess" a deficit by engaging in short term borrowing with tax exempt municipal bonds just as long as the rating services and banks will allow.^{40/}

Cronin argues that these districts also were characterized by leadership who could not or would not make the tough decisions to cut programs and staff in the face of declining enrollments. The consequences were the loss of

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Cronin, Big City School Bankruptcy.

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Cronin, Big City School Bankruptcy, p. 15.

control of local school officials in New York, Cleveland, and Chicago and the imposition of financial control boards or authorities which exercised significant control over city school district finances.

In a 1982 essay, Cronin argues further that demographic factors were the underlying cause of urban school district fiscal problems.^{41/} He charged that,

By the 1970s and 1980s demographic changes made the financing of urban schools more complicated because of three factors: race, retrenchment, and receivership.^{42/}

Cronin's explanation of this phenomenon has a two-fold thrust. First, middle class whites moved out of the cities and were replaced by lower income blacks and other minorities. This created increased service needs and brought court ordered desegregation, which, in turn, caused community unrest and increased school budgets. Secondly, the enrollment declines which followed these population shifts could have brought about school cost reductions, but they were met with community pressures to keep schools open and union efforts to retain staff, lower class size, and

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Cronin, "Financing Urban Schools."

42

Cronin, "Financing Urban Schools," p. 214.

provide additional services.^{43/} He goes on to say that "In the end, race issues and retrenchment postponements led to budget overruns and state controlled receivership."^{44/} The essence of Cronin's view seemed to be that changes in school district demography created profound changes within the schools themselves which resulted in political pressures that unbalanced district budgets - pressures which school officials could not or would not resist. This ultimately resulted in near bankruptcy for some major urban school districts and some kind of financial receivership.

Cibulka provides a different interpretation from a similar set of facts.^{45/} He examined ten large city school districts through an analysis of both enrollment and financial variables. He particularly considered the popular assumption that enrollment declines should lead to reductions in services and costs and greater efficiencies. To control for time lags in the response to losses of enrollment, Cibulka used data from the period 1974-75 through 1980-81. His findings included the following:

43

Cronin, "Financing Urban Schools," pp. 214-215.

44

Cronin, "Financing Urban Schools," pp. 221.

45

Cibulka, "Response to Enrollment Loss and Financial Decline in Urban School Systems."

1. Enrollment decline did not bear any consistently close relationship to service cutbacks or cost reductions.
2. It is more than enrollment losses that drive decisions to make service reductions.
3. There is no clear link between enrollment loss and degree of expenditure decline.46/

In contrast to Cronin, Cibulka concluded that

In the face of this shift from a middle class white to poor non-white, it was rational for school officials to spend additional monies on compensatory programs. Indeed, federal legislation for the handicapped, for bilingual children, for the educationally disadvantaged, encouraged higher expenditures for these groups. Even in cities where revenues could not support increases, school officials acted "responsively" by avoiding expenditure reductions.47/

He argued that school officials have been responding more to equity claims than to efficiency claims, at least up until the point it is no longer politically or economically feasible. Cibulka views urban school district fiscal stress in the context of a complex set of responses to the combination of political pressures and economic realities. While he does not explain precisely the causes of fiscal stress, Cibulka does call into question the somewhat

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Cibulka, pp. 65-70.

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Cibulka, p. 75.

simplistic view of urban school district fiscal stress as resulting from too many minority children and too little courage to resist increased demands of unions. This would seem to suggest that financial pressures on many urban school districts are not the result of uncontrolled increases in service costs, but more likely caused by the lack of income to match changing service requirements.

An economic approach to school district fiscal stress is taken by Hentschke and Yagielski.^{48/} They view local school districts as consumers of inputs in the educational process, rather than as producers of education, because they are constrained by both decisions made external to the district and because of the realities of a balanced budget. They maintain that fiscal strain occurs when local school decision makers are forced to change their purchase of inputs to a combination less preferred than the current mix of inputs. In their view, fiscal strain is caused through:

1. enrollment decline (changes in volume of students)

48

Hentschke and Yagielski, "School District Fiscal Strain: Implications for State and Federal Financial Assistance."

2. price increases (changes in the price of inputs)
3. external mandates (changes in the input mix).49/

To study the effect of these changes, Hentschke and Yagielski developed a model of the interaction of these factors and applied it to data from an actual school district. While they caution that their findings are only tentative, Hentschke and Yagielski offer several findings of their research:

1. Fiscal strain does not result so much from declining enrollments as from the economic and political environment of the late 1970s and early 1980s.
2. Price level changes are by far the greatest factor affecting fiscal strain.
3. Changes in the resource (input) mix account for a sizable portion of fiscal strain.50/

They note the effects of externally imposed mandates on local district price levels, and suggest that if current school finance aid mechanisms were altered to serve the requirements of these mandates, fiscal strain for local school districts might be lessened.

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Hentschke and Yagielski, pp. 56-63.

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Hentschke and Yagielski, p. 69.

Murphy compiled a list of possible reasons why school districts may experience financial trouble and tested the reasons by using data from Ohio school districts which were fiscally stressed. He found that the troubled school districts were characterized by numbers of special cost students, limited fiscal capacity, low tax effort, and were either large city or rural districts. They were not characterized by overstaffing, severe enrollment decline, or high minority enrollment.^{51/} Murphy's findings would imply that revenue deficiency was a major cause of fiscal strain in Ohio school districts. The significant variable of high numbers of special cost students might indicate a deficiency of state revenue for such students; low fiscal capacity and low tax effort would indicate a local revenue deficiency.

Berny examined a sample of rural Ohio school districts on six demographic and financial variables to try to determine the ability of those variables to distinguish between fiscally stressed and non-stressed districts. His six variables were: (1) geographical size, (2) special cost students, (3) fiscal capacity, (4) tax effort,

51

Murphy, "A Statistical Analysis of Ohio's Financially Troubled School Districts," p. 116.

(5) total general revenue, and (6) excess staff.^{52/} From his research, Berny concluded that:

1. There was no difference between troubled districts on any of the variables.
2. None of the variables possessed a higher discriminating capacity than any of the others.
3. No interactive or cumulative effect of variables was found which would exceed the effect of any of the other variables.^{53/}

He concluded that the variables he tested were not relevant to the question of why some districts are fiscally stressed and others are not. Berny also concluded that

The data suggest that purely objective measures such as those tested in this study are not material to the issue: rather the fiscal troubles may be manifestations of organizational and leadership shortcomings, all highly subjective and highly specific to a particular district.^{54/}

He further suggested the use of the case study approach with a limited number of districts in future research in this area.

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Berny, "Selected Variables as Discriminators Between Financially Troubled and Non-Troubled Rural Ohio School Districts," pp. 475-478.

53

Berny, p. 480.

54

Berny, p. 483.

Lee concentrated on conditions and factors over which school financial administrators have more control in his research and examined financial ratios as predictors of school district financial problems.^{55/} This approach was based on the technique of financial ratio analysis used extensively in corporate finance. He found that the model which predicted most accurately fiscal distress one year in advance contained variables in the three categories of financial liquidity, negotiated commitments such as salary and fringe benefit costs, and investment earnings.^{56/} Lee concluded that ratio analysis could be useful in predicting financial stress in school districts and suggested that the primary indicators were cash balance fluctuations and high salary and fringe benefit costs.^{57/}

At the beginning of his research, Berny asked the question, "Why do some districts experience financial trouble and yet others do not?"^{58/} The answer to that

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Robert Alan Lee, "Financial and Staffing Ratio Analysis: Predicting Fiscal Distress in School Districts," Journal of Education Finance 9 (Fall 1983), pp. 256-263.

56

Lee, p. 260.

57

Lee, p. 261-262.

58

Berny, p. 474.

question remains elusive, but yet is of utmost importance for matters of public policy. For cities, Clark argues that fiscal stress results from a mismatch of public fiscal policy and private resources. For school districts this would seem to translate into a mismatch between expenditure levels and fiscal capacity, but that model is too narrow to explain why some major urban schools have approached bankruptcy and others have escaped such a fate. Still discussing cities, Martin refines the argument to assert that revenue variability and, particularly, deficits of revenue over expenditure cause fiscal stress. This approach has yet to be tested with school districts, although Cibulka suggests a similar thesis.

In the area of school district fiscal stress, Cronin's work is very informative in a descriptive and historical sense, but his conclusions seem to be highly intuitive and untested in research. The works of Cibulka and Hentschke and Yagielski begin to open up the frontier in this issue and provide some tentative answers. Their studies suggest that the source of school district financial stress might be found on the revenue side of the budget rather than on the expenditure side.

The studies of Murphy and Berny share a common

approach, but provide conflicting and inconclusive results. Lee's research offers a fresh approach but falls short of providing a policy relevant explanation of school district fiscal problems. The fundamental question of what distinguishes fiscally stressed school districts from those which are not stressed remains largely unanswered.

CHAPTER III
DESIGN AND METHODOLOGY

This study was designed to test various theories of urban school district stress using econometric methods of correlation and multiple linear regression on a sample of major American city school districts. No new data were collected, but secondary data from a variety of sources were analyzed to test the various theories. Such a non-experimental design lacks the controls provided by a pure experimental design, but real world circumstances do not always allow for pure experimentation with public policy issues. As Wonnacott and Wonnacott have written:

We observe and record extraneous facts. Then, instead of designing them constant (as we would ideally do), we analyze our data in a compensating way (that gives us, insofar as possible, the same answer as if we could have held them constant). This analysis of the data is precisely what regression provides. In other words, we can think of regression as the statistical tool that introduces as much control as possible into an observational study.^{1/}

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Thomas H. Wonnacott and Ronald J. Wonnacott, Regression: A Second Course in Statistics (New York: John Wiley and Sons, 1981), p. 8.

It should be stated clearly at the outset that this study is not explaining the causes of urban school district fiscal stress, but is concerned with the prediction of fiscal stress. The distinction between explanation and prediction is important, and Pedhazur states that

it is necessary to distinguish between research designed primarily for predictive purposes and that designed for explanatory purposes. In predictive research the main emphasis is on practical applications, whereas in explanatory research the main emphasis is on the understanding of phenomena.... The distinction between predictive and explanatory research is particularly germane to the valid use and interpretation of results from regression analysis. In predictive research, the goal is to optimize prediction of criteria such as income, social adjustment, election results, academic achievement, or delinquency.^{2/}

In this study, the goal is to optimize the prediction of urban school district fiscal stress as defined by a bond rating which effectively removes the district from borrowing in regular financial markets.

Study Design

This research study examined twenty-five economic, demographic and social, financial, governance, and

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Elazar J. Pedhazur, Multiple Regression in Behavioral Research (New York: Holt, Rinehart and Winston, 1982), p. 136.

geographic variables in order to measure their ability to distinguish between large urban school districts which were fiscally stressed and those which were not. The variables were tested on their ability to predict bond ratings of large urban school districts in general.

Research Question

As stated in Chapter I, the research question addressed in this study is what factors distinguish large urban school districts which are fiscally stressed from those which are not. A subsidiary research question is what factors predict large urban school district bond ratings.

Research Hypotheses

The following research hypotheses were tested in this research study:

1. Fiscal stress and low bond ratings in large urban school districts are associated with such demographic variables as:
 - a. high percentage of dependent population (population age 18 and below and age 65 and above),
 - b. low educational attainment

- c. high percentage of black and Hispanic public school enrollment,
- d. high percentage of limited English proficient enrollment,
- e. high percentage of special education enrollment,
- f. high total public school enrollment (large district size),
- g. high rate of public school enrollment decline.

2. Fiscal stress and low bond ratings in large urban school districts are associated with such economic variables as:

- a. low median family income,
- b. low growth in median family income,
- c. high percentage of year-round housing units built 1939 or before,
- d. high percentage of workforce in manufacturing,
- e. low percentage of workforce in wholesale and retail trade,
- f. high percentage of workforce in non-education public employment.

3. Fiscal stress and low bond ratings in large urban school districts are associated with such financial variables as:

- a. high current operating expenditures per pupil,

- b. high expenditures per pupil for instruction,
- c. high expenditures per pupil for other current operations,
- d. low expenditures per pupil for capital outlay,
- e. high expenditures per pupil for salaries and wages,
- f. high expenditures per pupil for debt service,
- g. high debt outstanding per pupil,
- h. high dependence on intergovernmental revenue,
- i. high city non-education general expenditure per capita.

4. Fiscal stress and low bond rating in large urban school districts are associated with being fiscally dependent on another unit of government.

5. Fiscal stress and low bond ratings in large urban school districts are associated with districts in the Northeast and North Central regions of the United States.

It should be noted that the qualifiers "high" or "low" in this context are in relation to the average of the large city school districts in the study sample.

Sample

The sample chosen for this research study is similar to the sample used in U.S. Department of Education, School

Finance Project study of the funding prospects of urban public school systems.^{3/} This was done because of the obvious relationship between predicting fiscal stress and assessing future funding prospects and the possible policy value of studies on related topics using a similar sample. The School Finance Project study chose a sample of forty-four large urban school districts consisting of the largest urban school district in thirty-five states and two or more districts in some of the more populous states. It was not intended to be representative of all large urban school districts in the country.

For this study, thirty-nine of those large urban school districts were selected. New Castle County, Delaware, Jefferson County, Kentucky, and Mecklenburg County, North Carolina were eliminated because they share more characteristics with large suburban school districts than with urban districts. The District of Columbia public schools were eliminated because of their unique nature of school funding and governance and because of the absence of

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U.S. Department of Education, School Finance Project, The Financing of Urban Public Schools: A Report on Selected School Systems, Supplement to Final Report, Volume 1 of the Congressionally Mandated Study of School Finance, Washington: n.p., 1983.

any state funding. Finally, Portland, Oregon, was eliminated because of the lack of a Moody's bond rating.

The resulting thirty-nine urban school districts used in this study were those districts serving the following cities:

Albuquerque, New Mexico
Atlanta, Georgia
Baltimore, Maryland
Birmingham, Alabama
Boston, Massachusetts
Buffalo, New York
Chicago, Illinois
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Dallas, Texas
Denver, Colorado
Detroit, Michigan
Hartford, Connecticut
Houston, Texas
Indianapolis, Indiana
Kansas City, Kansas
Kansas City, Missouri
Las Vegas, Nevada
Los Angeles, California
Memphis, Tennessee
Miami, Florida
Milwaukee, Wisconsin
Minneapolis, Minnesota
Newark, New Jersey
New Orleans, Louisiana
New York, New York
Oakland, California
Omaha, Nebraska
Philadelphia, Pennsylvania
Pittsburgh, Pennsylvania
Providence, Rhode Island
Richmond, Virginia
St. Louis, Missouri
Salt Lake City, Utah
San Antonio, Texas
San Diego, California

Seattle, Washington
Tulsa, Oklahoma

In cases where cities were contained in county school districts (Las Vegas in Clark Co. and Miami in Dade Co.), either city or county data were used, whichever was more appropriate.

Using the Moody's Municipal and Government Manual 4/ for 1983, bond ratings were determined for the general obligation borrowings of each school district. In the cases of dependent school districts, the general obligation bond rating of the parent government was used because it is that rating which determines the district's ability to borrow. The cities in the sample were classified by bond rating as follows:

	<u>B</u>	
Chicago		Philadelphia
	<u>Ba</u>	
Boston		Cleveland
	<u>Baa</u>	
Buffalo		New York
Cincinnati		Providence
Columbus		St. Louis
Detroit		

A

Baltimore	Miami
Birmingham	New Orleans
Hartford	Oakland
Kansas City, Kansas	Pittsburgh
Las Vegas	San Antonio

Aa

Albuquerque	Milwaukee
Atlanta	Newark
Denver	Richmond
Indianapolis	San Diego
Kansas City, Missouri	Seattle
Los Angeles	Tulsa
Memphis	

Aaa

Dallas	Omaha
Houston	Salt Lake City
Minneapolis	

As stated above, governmental units with bond ratings of B or Ba are generally not able to borrow money at any interest rate. Bond ratings of Baa generally command high enough interest rates and little enough interest on the part of investors to make borrowing prohibitive.

Generally, the higher the bond rating, the lower the interest rate paid. This is shown in Table 1.

For this study, school districts with bond ratings which generally preclude borrowing (B or Ba) or allow borrowing only with great difficulty at a greater cost (Baa) were considered to be stressed. Districts with

higher bond ratings (A, Aa, Aaa) were considered to be non-stressed.

Since the fiscal crises of a number of large cities in the late 1970s, there has been some criticism of the objectivity and accuracy of some bond ratings. However, since fiscal stress has been defined in this study as the inability to borrow money in regular financial markets, the use of bond ratings was key because those ratings, objective and accurate or not, are the single most important factor in determining the relative credit worthiness of local governmental units.⁵/

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For a discussion of municipal credit analysis and the use of bond ratings to determine fiscal stress, see Roy Bahl, Financing State and Local Government in the 1980s (New York: Oxford University Press, 1984), pp. 62-64.

Table 1
 Moody's Municipal Long Term
 Bond Yield Averages
 For All General Obligation Bonds

	Municipal Average	Aaa	By Rating Aa	Class A	Baa
July 1978	6.09	5.73	5.89	6.17	6.44
July 1979	5.85	5.58	5.86	5.95	6.00
July 1980	7.85	7.35	7.58	7.99	8.46
July 1981	10.86	10.21	10.63	11.04	11.55
July 1982	12.36	11.47	12.16	12.64	13.17
July 1983	9.38	8.68	9.20	9.59	10.06

Source: Moody's Investors Service, Moody's Municipal and Government Manual, 1984 edition.

Variables

Two criterion variables and twenty-five predictor variables were used in the study.^{6/} One criterion variable, DEPDM1, consisted of ascending numerical values for each bond rating classification, with the lowest two ratings collapsed into one class because of the small number of cases in each (i.e. B and Ba = 1, Baa = 2, A = 3, Aa = 4, Aaa = 5). A second criterion variable, DEPDM2, was a dummy variable with districts with fiscal stress having a value of one and those which are not stressed having a value of zero. The predictor variables were used in an attempt to predict the values of the district in the sample on the criterion variables.

Twenty-five predictor variables were used, corresponding to the factors in the research hypotheses. A complete listing of the variables with codes, descriptions, and sources is included in Table 2.

The criterion variables are based on 1983 data. As noted in Table 2, most of the predictor variables are for a

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For a definition and discussion of the terms "criterion variable" and "predictor variable," see Pedhazur, pp. 137-138.

period in the 1979-1981 range. Depending on the time of availability of these data, any predictive value found could be used to predict fiscal stress from two to three years in advance.

Table 2
Specification of Variables

Variable	Description	Source
1 DEPDM1	Bond rating	a
2 DEPDM2	Dummy variable for fiscal stress	a
3 POPDEP	Percent of population under 18 years old and 65 years old or older, 1980	b
4 YFAMMD	Median family income, 1979	b
5 YDFAMM	Percent change in median family income, 1969-1979	b
6 AGESTR	Percent year-round housing units built 1939 or earlier	b
7 WKFMAN	Percent of workforce in manufacturing, 1980	c
8 WKFTRD	Percent of workforce in wholesale and retail trade, 1980	c
9 WKFPAD	Percent of workforce in public administration, 1980	c
10 EDUATT	Percent of population over 16 with at least some college education, 1980	b
11 ENRBLH	Percent public school enrollment, black and Hispanic, 1978-79	d
12 ENRLEP	Percent public school enrollment, limited English proficient, 1980-81	d
13 ENRSPE	Percent public school enrollment, special education pupils, 1980-81	d

Table 2 Continued
Specification of Variables

Variable	Description	Source
14 TOTENR	Total public school enrollment (in thousands), fall 1980	e
15 PCHENR	Percent change in enrollment, 1976-1980	e
16 EXPCOP	Per pupil expenditure, current operations, 1980-81	e
17 EXPINS	Per pupil expenditure, instruction 1980-81	e
18 EXPOCU	Per pupil expenditure, other current operations, 1980-81	e
19 EXPCAP	Per pupil expenditure, capital outlay, 1980-81	e
20 EXPS&W	Per pupil expenditure, salaries and wages, 1980-81	e e
21 EXPITD	Per pupil expenditure, interest on debt, 1980-81	e
22 DEBTOS	Per pupil debt outstanding, June 30, 1981	e
23 REVIGV	Percent total general revenue from intergovernmental sources	e
24 FISDEP	Dummy variable for fiscal dependency	e

Table 2 Continued
Specification of Variables

Variable	Description	Source
25 REGVR1	Regional variable: Northeast & North Central = 1	-
26 REGVR2	Regional variable: Northeast & East North Central = 1	-
27 MUNOV B	Per capita non-education city expenditures, 1980-81	f

Sources:

- a, Moody's Investors Service, Inc., Municipal and Government Manual, 1983
- b, U.S. Bureau of the Census, 1980 Census of Population and Housing: Summary Characteristics for Governmental Units and Standard Metropolitan Statistical Areas.
- c, International City Management Association, Characteristics of City Population, Baseline Data Report, Vol. 16, No. 2 (Washington, D.C.: ICMA, February 1984).
- d, U.S. Department of Education Office of Civil Rights, Directory of Elementary and Secondary School Districts and Schools in Selected School Districts: School Years 1978-79 and 1980-81, as quoted in U.S. Department of Education, School Finance Project, The Financing of Urban Public Schools: A Report on Selected School Systems.
- e, U.S. Bureau of the Census, Finances of Public School Systems [various years], Government Finance series.
- f, U.S. Bureau of the Census, City Government Finances in 1981, Government Finance series.

Method

Zero order correlations were calculated among all of the variables in the study. Secondly, multiple linear regression was employed to determine the degree of relationship between the various predictor variables and the criterion variables. For each criterion variable a regressive equation was calculated using all predictor variables with correlation coefficients with the criterion variable significant at the .05 level. Then, using a backward elimination method, the variables with the lowest standardized beta coefficients were dropped one at a time. At each step the loss of R^2 and the change in the F-ratio of the resulting multiple regression equation were studied. The process continued until no meaningful loss to R^2 occurred or the resulting standardized beta coefficients were meaningful in their contribution and statistically significant.^{7/}

The correlation matrix and multiple linear regression equations were then studied and analyzed to determine what predictor variables served as the best predictors of urban school district fiscal stress and bond ratings.

⁷

For a full explanation of the backward elimination method, see Pedhazur, pp. 158-160.

Like any statistical technique, regression is based on a number of underlying assumptions. Violations of those assumptions call into question the use and results of the particular technique. One of the assumptions of linear regression is that all the variables employed are continuous variables at least at the interval level. For this study, both criterion variables do not technically meet this requirement. The numerical scores for bond ratings are not continuous, although they have many of the characteristics of an interval scale. The bond rating scale also assumed equal intervals between bond ratings, but there is no evidence that this is the case. The fiscal stress variable is a dummy variable. As Pedhazur notes, departures from, or violation of, the assumptions of regression can lead to serious problems.⁸ However, he goes on to say that "it has been demonstrated that regression analysis is generally robust in the presence of departures from assumptions, except for measurement errors and specification errors."⁹ Measurement errors should not

⁸

Pedhazur, p. 33.

⁹

Pedhazur, p. 34.

be a problem in this study. Particular care was taken in the analysis and interpretation of the results to eliminate specification errors.^{10/} As noted above, such considerations are less a problem in predictive research.^{11/}

Limitations of the Study

In addition to the limitation noted above, it should be stated that nonexperimental studies such as this are of limited generalizability. The results cannot be attributed beyond the sample of large urban school districts in the sample. It would not be proper to apply them beyond this group. Prediction as used in this study should not imply causation. Factors associated with urban school district fiscal stress are not necessarily the causes of urban school district stress. As Pedhazur has stated, "it is the researcher, not the method, that should be preeminent. It is the researcher's theory, specific goals, and knowledge about the measures being used that should serve as guides

10

See Pedhazur, chapter 8, especially pp. 225-230; see also Hubert M. Blalock, Jr., Conceptualization and Measurement in the Social Sciences (Beverly Hills, Calif.: Sage Publications, 1982).

11

Pedhazur, p. 138.

in the selection of analytic methods and the interpretation of the results."12/ Like all research, this study also is limited by the limitations of the researcher.

12

Pedhazur, p. 171.

CHAPTER IV

RESULTS AND FINDINGS

This chapter presents the results and findings of the study in terms of the predictors of large urban school district bond rating and fiscal stress. Results of both the correlation analysis and multiple linear regression are presented.

Correlation Analysis

Zero order correlations were calculated between the two criterion variables and the twenty-five predictor variables for all thirty-nine cases. Correlation coefficients of absolute value of .27 or above were statistically significant at the .05 level on a one-tailed test. The results of the correlation are found in Table 3.

Bond Rating

Sixteen predictor variables had correlations with the bond rating criterion variable that were significant at the .05 level. The strongest relationships with bond ratings were found with the Northeast-East North Central dummy variable (-.63), housing built 1939 or before (-.56), and proportion of the population with some college education

(.55). Also ranking high were change in median family income (.49), the Northeast-North Central dummy variable (.48), proportion of the workforce in wholesale and retail trade (.46), and median family income (.44). Other statistically significant predictor variables were per pupil school district debt outstanding (-.36), per capita non-education city expenditures (-.36), per pupil expenditure on capital outlay (.35), proportion of workforce in public administration (-.33), proportion of population dependent (-.32), per pupil expenditure for interest on debt (-.32), per pupil expenditure for current operations (-.30), per pupil expenditure for other current operations (-.29), and percent enrollment which is black and Hispanic (-.28).

Predictor variables which show very little relationship with bond rating are percent limited English proficient student enrollment (-.08), change in school enrollment (.12), proportion of school district revenue from intergovernmental sources (-.12), proportion of the workforce in manufacturing (-.16), and per pupil school district expenditures on salaries and wages (-.19).

Weak, but not statistically significant, relationships existed between bond rating and per pupil expenditure for instruction (-.24), size of school district (-.23), percent

Table 3
Zero Order Correlations
With Criterion Variables

Predictor Variable	Criterion Variable	
	Bond Rating	Fiscal Stress
Dependent population	-.32*	.23
Median family income	.44*	-.27*
Change in median family income	.49*	-.41*
Housing built 1939 or before	-.56*	.60*
Workforce in manufacturing	-.16	.27*
Workforce in trade	.46*	-.39*
Workforce in public administration	-.33*	.14
Population with some college education	.55*	-.36*
Black and Hispanic enrollment	-.28*	.09
Limited English proficient enrollment	-.08	-.03
Special education enrollment	-.22	.23
Size of school district	-.23	.29*
Change in school enrollment	.12	-.21
Per pupil expenditure, current operations	-.30*	.36*
Per pupil expenditure, instruction	-.24	.35*
Per pupil expenditure, other current	-.29*	.29*
Per pupil expenditure, capital outlay	.35*	-.18
Per pupil expenditure, salaries & wages	-.19	.29*
Per pupil expenditure, interest on debt	-.32*	.30*
Per pupil debt outstanding	-.36*	.26
Proportion intergovernmental revenue	-.12	-.11
Dependent school district	-.20	.20
Northeast, North Central	-.48*	.61*
Northeast, East North Central	-.63*	.68*
Per capita non-education city expenditures	-.36*	.43*

* significant at .05 level (df = 37)

of enrollment in special education (-.22), and the dummy variable for a dependent school district (-.20).

The results of the correlation analysis show that large urban school districts with high bond ratings tend to be those that are not in the Northeast or East North Central regions of the United States, are relatively young cities with a high proportion of housing built after 1939, have a well educated citizenry, have a high median family income and a high family income growth rate, and are located in cities which are trade centers. Conversely, large urban school districts with low bond ratings are older, poorer cities in the Northeast and East North Central region with a low family income growth rate and low educational attainment, and have a low proportion of the workforce in wholesale and retail trade.

The signs of all correlation coefficients between bond rating and the predictor variables were as predicted.

Fiscal Stress

The city school districts were also dummy coded for a criterion variable representing a measure of fiscal stress. With this criterion variable, the relative credit soundness as shown by the bond rating was not important; the critical distinction was whether the school district was fiscally

stressed or not. With the bond rating variable, the purpose was to predict a bond rating. The purpose of the fiscal stress criterion variable was to be able to predict fiscal stress in large city school districts.

Fifteen predictor variables showed statistically significant relationships with fiscal stress at the .05 level on a one-tailed test. The strongest relationships existed between fiscal stress and Northeast-East North Central dummy variable (.68), the Northeast-North Central dummy variable (.61), the proportion of housing built 1939 or before (.60), the per capita non-education city expenditures (.43), and the change in median family income (-.41).

Other statistically significant predictor variables were proportion of workforce in trade (-.39), proportion of population with some college education (-.36), per pupil expenditures for current operations (.36), per pupil expenditures for instruction (.35), per pupil expenditures for interest on debt (.30), per pupil expenditures for other current operations (.29), per pupil expenditures for salaries and wages (.29), size of school district (.29), the proportion of workforce in manufacturing (.27), and median family income (-.27).

Five predictor variables were not statistically significant, but showed some relationship with fiscal stress. They were per pupil debt outstanding (.26), dependent population (.23), percent special education enrollment (.23), change in school enrollment (-.21), and the dummy variable for dependent school district (.20).

The five predictor variables which showed little or no relationship with fiscal stress were percent of enrollment who were limited English proficient (-.03), percent of enrollment who were black and Hispanic (.09), the proportion of school revenues from intergovernmental sources (-.11), the proportion of the workforce in public administration (.14), and the per pupil expenditure for capital outlay (-.18).

Large urban school districts which are fiscally stressed are those in the Northeast and East North Central regions, which are older cities with older housing, which have high non-education city expenditures, and have low growth in median family income. They also tend to have a low proportion of their workforce in trade, have a population with low educational attainment, have high per pupil school expenditures in most categories, have a high proportion of their workforce in manufacturing, and have low family income levels.

Only two correlation coefficients did not display the expected sign. Fiscal stress was negatively correlated with proportion of school revenues from intergovernmental sources and with proportion of school enrollment which was limited English proficient. In both cases it was expected that the relationship would be positive. However, in both instances the correlations were very low.

Analysis of Multiple Regressions

Bond Rating

An initial multiple linear regression equation was calculated with bond rating as the criterion variable and with the fifteen significant predictor variables. Since there were two regional dummy variables, the one with the least predictive value was dropped. The Northeast-East North Central variable remained. The multiple linear regression equation which resulted had a multiple correlation coefficient of .839 and a coefficient of determination of .703. In other words, this combination of fifteen predictor variables could account for 70 percent of the variance in bond ratings. The regression equation had an F-ratio of 3.745, which was significant at the .05 level. At the .05 level, an F-ratio of 2.16 is significant with 15 and 22 degrees of freedom.

Using a backward elimination method, predictor variables with the lowest standardized regression coefficients were dropped one at a time from the regression equations. Variables were also eliminated which had very high correlations with other predictor variables, therefore, producing problems of multicollinearity. The regression equation which resulted contained five predictor variables: percent of housing built 1939 or before, proportion of population with some college education, per pupil expenditures for capital outlay, per capita city non-education expenditures, and the regional variable. This equation had a multiple correlation coefficient of .757 and a coefficient of determination of .573. The regression equation had an F-ratio of 8.867. Dropping ten of the predictor variables from the equation only resulted in a loss of R^2 of .130. This simpler equation still accounted for 57 percent of the variance in bond rating.

This equation was also calculated without the regional variable. The purpose for doing this was to determine how much predictive value the other predictor variables had, controlling for region. The results of both equations are shown in Table 4.

Table 4
Regression Results With Bond
Rating as the Criterion Variable

Predictor Variable	Equation	
	BR1	BR2
Percent housing built 1939 or before (AGESTR)	- .12 (- .73)	- .27** (-1.74)
Percent population with some college (EDUATT)	.25** (1.88)	.36** (2.70)
Per pupil expenditure, capital outlay (EXPCAP)	.26** (2.13)	.25** (1.99)
Per capita non-education city expenditure (MUNOV B)	- .19* (-1.38)	- .22* (-1.52)
Northeast-East North Central (REGVR2)	- .34** (-2.21)	-- --
² R	.573	.510
F-Ratio	8.867**	8.850**

The numbers for each predictor variable are standardized regression coefficients.

The numbers in parentheses are t-values.

**significant at .05 level.

*significant at .10 level.

By eliminating the regional variable, the R^2 dropped from .573 to .510. Without the regional variable, the resulting four variables could account for 51 percent of the variance in bond rating. The elimination of the regional variable did not change the relative contribution to the prediction of per pupil expenditures for capital outlay or per capita non-education city expenditures, but caused a large increase in the relative contribution to the prediction of percent of housing built 1939 or before and the percent of population with some college.

Since the regional variable does make a significant difference in the equation, it is important to look at the correlates of the Northeast-East North Central variable. These are shown in Table 5. The Northeast-East North Central regional variable is most closely related to the proportion of housing built 1939 and earlier (.60), change in median family income (-.56), per pupil expenditures for instruction (.54) and current operations (.53), and proportion of workforce in trade (-.52). Cities and city school districts in the Northeast and East North Central regions tend to have older housing, slow growth in median family income, high per pupil school spending, and a low proportion of the workforce in trade. Since this regional variable is highly correlated with older housing (.60) and

Table 5
 Correlates of the Northeast-
 East North Central Regional Variable

Variable	Correlation Coefficient
Population under 18 and 65 and over	.24
Median family income	-.28*
Change in median family income	-.56*
Housing built 1939 and before	.60*
Workforce in manufacturing	.46*
Workforce in trade	-.52*
Workforce in public administration	.06
Population with some college	-.49*
Black and Hispanic enrollment	.10
Limited English proficient enrollment	.09
Special education enrollment	.21
Total enrollment	.18
Change in enrollment	-.40*
Per pupil expenditures, current operations	.53*
Per pupil expenditures, instruction	.54*
Per pupil expenditures, other current operations	.41*
Per pupil expenditures, capital outlay	-.11
Per pupil expenditures, salaries and wages	.46*
Per pupil expenditures, interest on debt	.41*
Per pupil debt outstanding	.43*
Percent school revenue intergovernmental	-.09
Fiscally dependent school district	.32*
Per capita non-education city expenditure	.36*

*significant at .05 level.

educational attainment is highly correlated with income levels (.59) and changes in income levels (.55), as well as the regional variable (-.49), it is not surprising that eliminating the regional variable from the regression equation would increase the predictive value of both housing built 1939 and earlier and percent of the population with some college.

Fiscal Stress

The calculation of a multiple linear regression equation with fiscal stress as the criterion and with all statistically significant predictor variables yielded an equation with a multiple correlation coefficient of .787 and a coefficient of determination of .620. The regression equation had an F-ratio of 2.793, which was significant at the .05 level. The fourteen significant predictor variables, eliminating one of the regional variables, produced an equation which accounted for 62 percent of the variation in fiscal stress.

A backward elimination method was used to reduce the number of predictor variables. The regression equation which resulted contained the same five predictor variables as the equation predicting bond ratings. The results of the equations with both the regional variable included

Table 6

Regression Results With Fiscal
Stress as the Criterion Variable

Predictor Variable	Equation	
	FS1	FS2
Percent housing built 1939 or before (AGESTR)	.20 (1.21)	.41** (2.47)
Percent population with some college (EDUATT)	- .0002 (- .001)	- .15 (-1.03)
Per pupil expenditure, capital outlay (EXPCAP)	- .11 (- .91)	- .11 (- .77)
Per capita non-education city expenditures (MUNOV B)	.17 (1.21)	.22* (1.36)
Northeast-East North Central (REGVR2)	.48** (3.02)	-- --
² R	.538	.411
F-ratio	7.700**	5.939**

The number for each predictor variable are standardized regression coefficients.

The numbers in parentheses are t-values.

**significant at .05 level.

*significant at .10 level.

and excluded are shown in Table 6. When the regional variable was eliminated, the R^2 dropped from .538 to .411, indicating a decrease of almost 13 percentage points in the predictive value of the equation. The elimination of the regional variable increased the relative predictive values of the percent population with some college variable and the percent housing built 1939 or before variable, just as it did with the equation predicting bond rating.

The Regression Equations

For predicting bond ratings, the regression equations with the unstandardized regression coefficients were:

1. (with regional variable)

$$\begin{aligned} \text{Bond rating} = & 2.7214 - .0074 \text{ AGESTR} + .0366 \text{ EDUATT} \\ & + .0038 \text{ EXPCAP} - .0009 \text{ MUNOVB} - .8206 \text{ REGVR2} \end{aligned}$$

2. (without regional variable)

$$\begin{aligned} \text{Bond rating} = & 2.3567 - .0168 \text{ AGESTR} + .0519 \text{ EDUATT} \\ & + .0038 \text{ EXPCAP} - .0011 \text{ MUNOVB} \end{aligned}$$

For predicting fiscal stress, the regression equations with the unstandardized regression coefficients were:

3. (with regional variable)

$$\begin{aligned} \text{Fiscally stressed} = & - .1965 + .0049 \text{ AGESTR} - .00001 \text{ EDUATT} \\ & - .0006 \text{ EXPCAP} + .0003 \text{ MUNOVB} + .4437 \text{ REGV} \end{aligned}$$

4. (without regional variable)

$$\begin{aligned} \text{Fiscally stressed} = & .0007 + .0100 \text{ AGESTR} - .0083 \text{ EDUATT} \\ & - .0006 \text{ EXPCAP} + .0004 \text{ MUNOVB} \end{aligned}$$

Since discriminant analysis when dealing with two groups is identical to multiple regression using a dependent or criterion variable which is nominal with dummy codes of one and zero representing group membership, the regression equations for fiscal stress are actually discriminant functions which can be used to assign group membership.^{1/}

Predicted Values

Using the regression equations with the regional values, the predicted values of both bond ratings and fiscal stress were calculated. Those predicted values are shown in Table 7. A great deal of the error which was evident in the regression equations disappears when the predicted values are compared with the actual values. As can be seen by an examination of Table 7, when the predicted values are rounded to the nearest whole number, there are fewer errors in prediction than might be expected. A full discussion of those errors will be

 1

Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1973), p. 650.

Table 7
 Predicted Values for
 Bond Ratings and Fiscal Stress

School District	Bond Rating		Fiscal Stress	
	Actual Value	Predicted Value	Actual Value	Predicted Value
Boston	1	2.52	1	0.78
Chicago	1	2.38	1	0.63
Cleveland	1	1.85	1	0.68
Philadelphia	1	1.48	1	0.82
Buffalo	2	1.90	1	0.79
Cincinnati	2	2.55	1	0.63
Columbus	2	2.86	1	0.49
Detroit	2	2.63	1	0.59
New York	2	1.87	1	0.88
Providence	2	2.14	1	0.71
St. Louis	2	2.39	1	0.36
Baltimore	3	2.90	0	0.26
Birmingham	3	3.66	0	-0.01
Hartford	3	1.77	0	0.75
Kansas City, Kansas	3	3.15	0	0.07
Las Vegas	3	3.81	0	-0.13
Miami	3	4.09	0	-0.14
New Orleans	3	3.11	0	0.19
Oakland	3	3.95	0	0.13
Pittsburgh	3	2.44	0	0.66
San Antonio	3	3.60	0	-0.05
Albuquerque	4	4.47	0	-0.12
Atlanta	4	3.71	0	0.08
Denver	4	4.06	0	0.10
Indianapolis	4	3.19	0	0.41
Kansas City, Missouri	4	3.20	0	0.17
Los Angeles	4	3.87	0	0.01
Memphis	4	3.59	0	-0.03
Milwaukee	4	2.25	0	0.60
Newark	4	2.17	0	0.58

Table 7 Continued
 Predicted Values for
 Bond Ratings and Fiscal Stress

School District	Bond Rating		Fiscal Stress	
	Actual Value	Predicted Value	Actual Value	Predicted Value
Richmond	4	3.60	0	0.14
San Diego	4	4.22	0	-0.07
Seattle	4	3.77	0	0.19
Tulsa	4	4.19	0	-0.06
Dallas	5	3.97	0	-0.04
Houston	5	4.64	0	-0.17
Minneapolis	5	4.36	0	0.11
Omaha	5	4.63	0	-0.04
Salt Lake City	5	4.40	0	0.05

contained in the next chapter. The predicted values form the basis of the use of this methodology in policy settings to predict financial problems of large urban school districts.

CHAPTER V
ANALYSIS AND DISCUSSION

The research question addressed in this study is what distinguishes large urban school districts which are fiscally stressed from those which are not. Since fiscal stress has been defined, for the purposes of this study, as the inability to borrow in regular financial markets, this study also examined those factors which can be used to predict bond ratings.

In previous research, Cronin attributed financial problems in large city school districts to increased service needs brought about by a high proportion of lower income black and other minority students and to high per pupil costs resulting from the dislocations of declining enrollments. He viewed urban school districts financial problems in a demographic framework. Changes in the levels and kinds of students brought about fiscal problems. Cibulka found no close relationship between enrollment decline and fiscal problems, but suggested that large urban school districts suffer from a lack of revenue to match changing service requirements.

Hentschke and Yagielski found that school district fiscal problems were not caused so much by declining enrollments as they were by increasing price levels for school resource inputs and a changing resource input mix resulting from external mandates as well as internal shifts. Their research addressed the general financial malaise of school districts more than it did the question of why some districts have financial problems and others do not.

Murphy examined fiscally troubled school districts and found that those experiencing financial problems had a high number of special cost students, low fiscal capacity, and low tax effort. Berny studied rural school districts in the same state and found no statistically significant differences between fiscally stressed and non-stressed rural school districts on six factors, including those found significant by Murphy.

Lee took a different approach and examined financial ratios in school districts and found he could predict financial stress one year in advance through an analysis of cash balance fluctuations and salary and fringe benefit costs. His research, however, did not address the underlying structural factors which may lead to fiscal stress in school districts. The Murphy, Berny, Lee, and

Hentschke and Yagielski studies did not specifically address the problems of urban school districts, but addressed the problems of school districts in general, except for Berny who studied rural districts.

This study examined and tested twenty-five possible predictors of large urban school district fiscal stress and bond ratings. These predictors were demographic, economic, financial, governance, and geographic factors which were drawn largely from the research literature on urban fiscal stress and school district fiscal stress. The hypotheses tested were that these factors could predict fiscal stress in large urban school districts. Since fiscal stress was measured by 1983 bond ratings and most of the predictor variables were from 1980, the 1979-80 school or fiscal year, or the 1980-81 school or fiscal year, any significant predictive value provided by these factors would provide a prediction up to three years in advance. Because of the lag time in reporting some of the data, that three year lead time actually might be less.

Analysis of Predictor Variables

Demographic Variables

Of the seven demographic variables employed in the study, three had a significant relationship with bond

ratings and two had a significant relationship with fiscal stress. The only demographic variable that had a statistical significant relationship with both bond rating and fiscal stress was the proportion of the population age 16 or above which had some college education or were college graduates. The relationship was particularly strong with bond ratings ($r = .55$). The higher the average educational attainment of the city's population, the higher the bond rating.

Higher educational attainment would seem to influence bond ratings and fiscal stress in at least two ways. The higher the educational attainment of a community, the greater the ability of the community ceteris paribus to generate higher and more stable personal income streams. It can be argued that employment would be more steady and average incomes would be higher. Secondly, cities with a better educated populace would be more likely to tax themselves to support higher levels of educational spending. Both would have a positive impact on the ability of a local governmental entity to repay financial obligations and, thus, enhance its credit quality.

The proportion of the population that is dependent, defined as those under eighteen years of age and sixty-five

years of age or older, had a statistically significant relationship with bond ratings. The greater the proportion of dependent population, the lower the bond rating. A high dependent population would lessen the financial ability of the city to support public services with fewer workers supporting more dependents and increase the demand for public services through added educational, recreational, health, and social welfare services. This would affect school districts both directly and through increasing the demand on a common school district and city tax base. Although this factor was significantly related to bond rating, it was not significantly related to fiscal stress.

Five of the demographic variables were public school variables. The total size of the school district (student enrollment) was related to fiscal stress, but was not statistically related to bond rating. Large school districts tend to be more fiscally stressed, but the size of the district alone could only predict about 8 percent of the variance in the fiscal stress variable.

The percent change in school district enrollment had no statistically significant relationship with either bond ratings or fiscal stress. Over the four year period that enrollment change was computed, urban school districts in the sample had changes that ranged from a growth of seven

percent to a decline of thirty-five percent. These changes had no significant impact in predicting financial problems. In this study declining enrollment does not emerge as a significant factor in predicting fiscal trouble in large urban school districts.

Three of the variables had to do with the proportion of the total school district enrollment that were in categories that are associated with special needs and higher per pupil costs: minority students, limited English proficient students, and special education students. The percentage of the enrollment that was black and Hispanic was statistically significant in predicting bond ratings, but showed almost no relationship to fiscal stress. In fact, black and Hispanic enrollment could account for less than one percent of the variance in fiscal stress. Neither of the other two enrollment variables were significantly related to either bond ratings or fiscal stress. This would contradict the claim that high proportions of minority students, limited English proficient students, and special education students lead to fiscal problems. No evidence was found in this study to support that contention.

The demographic variables that are strong predictors of bond ratings and fiscal stress are those that are

characteristics of the population in general in the city, not characteristics of the student population served by the school district.

Economic Variables

With one exception with each criterion variable, all of the economic variables were significantly related to bond ratings and fiscal stress. Median family income, change in median family income, percent of city housing built in 1939 or earlier, and percent of workforce in wholesale and retail trade were all predictors of both bond ratings and fiscal stress. The percent of workforce in manufacturing was significantly related to fiscal stress, but not to bond ratings. It only accounted for seven percent of the variance in fiscal stress. The percent of the workforce in non-education public sector was related in a statistically significant manner to bond ratings, but not to fiscal stress. As a group, the economic predictor variables were stronger predictors of both bond ratings and fiscal stress than any other category of variables, except for the geographic variables based on region.

Median family income and growth in median family income both relate very directly to the ability of a jurisdiction to raise public revenues and repay debt

obligations. As such, they are measures of fiscal capacity of a governmental entity. One demographic variable, educational attainment, is highly related to both median family income ($r = .59$) and to growth in median family income ($r = .55$). Median family income and growth in median family income are also highly intercorrelated ($r = .69$). Overall, the educational attainment variable had a higher predictive value for the criterion variables. Given the high interrelationship among median family income, growth in median family income, and educational attainment, the variable with the best predictive qualities was used in the regression equations. Therefore, when educational attainment emerges in the equations as a stronger contributor to predicting bond ratings and fiscal stress, it really indicates the contribution to predicting high bond ratings and low fiscal stress of a well educated populace with high income levels and an above average growth in income levels. Large urban school districts with low bond ratings and fiscal stress tend to be those in cities with a low educational level, low income, and low income growth. These factors all impair the ability of the city school district to raise revenues and to repay debt obligations. In fact, it may be these factors which caused the school district to possibly overextend its borrowings

in the first place, causing difficulty in repaying the debt and jeopardizing its credit quality and bond rating.

The percentage of housing in the city built in 1939 or earlier was one of the strongest predictors of both bond rating and fiscal stress. By itself, this factor could account for about thirty-one percent of the variance in bond ratings and almost thirty-six percent of the variance in fiscal stress. Its individual ability to account for about one-third of the total variance in both measures made it a powerful predictor. The percentage of older housing was strongly related to region with a correlation coefficient of .69 with the Northeast-North Central variable. However, in the regression analysis, both age of housing and regional variables tended to contribute strongly to the predictive value of the equations. Since most cities and city school districts have a fairly heavy dependence on the property tax for revenue, the high incidence of older housing could depress the overall level of property values and have a detrimental effect on local fiscal capacity.

The workforce variables show that the percentage of the city workforce in trade is related to both bond ratings and fiscal stress. The greater the dependence on wholesale and retail trade, the higher is the city school district's

bond rating and the lower is the chance of fiscal stress. Wholesale and retail trade are less prone to cyclical swings in the economy and, therefore, provide more stability.¹/ The more stable the local economy, the less is the credit risk of loaning money to local governmental units.

The results of this study indicate that the economic variables, when taken as a group and taken individually, are important predictors of bond ratings and fiscal stress. Like the demographic variables, the economic variables represent factors that are outside the control of local school or municipal officials.

Financial Variables

Six of the nine financial variables are per pupil expenditure figures for the local city school district for current operations, instruction, other current operations, capital outlay, salaries and wages, and interest paid on outstanding debt. As Table 8 shows, per pupil expenditures for current operations, instruction, other current

¹ Smith, The Appraisal of Municipal Credit Risk, p. 24.

Table 8
 Interrelationships of Per Pupil School
 Expenditure Variables

Per Pupil Expenditures for	Current Operations	Per Pupil Expenditure for Instruction	Other Current Operations	Capital Outlay	Salaries and Wages	Interest on Debt
Current Operations	1.00					
Instruction	.89	1.00				
Other Current Operations	.89	.58	1.00			
Capital Outlay	-.09	-.11	-.06	1.00		
Salaries and Wages	.91	.89	.72	-.02	1.00	
Interest on Debt	.46	.44	.37	.13	.48	1.00

The numbers are correlation coefficients.

Coefficients of .27 or above are significant at the .05 level.

operations, and salaries and wages are highly intercorrelated. These four all are significantly related to fiscal stress in that high per pupil expenditures are predictors of fiscal stress. Except for two relatively weak correlations, they are not significantly related to bond rating. Even the relationships to fiscal stress are weaker than many others, although instructional and current operations expenditures are fairly good predictors of fiscal stress. Per pupil expenditures on interest on debt is a weak, but significant predictor of lower bond ratings and higher fiscal stress. The total debt outstanding per pupil is only significantly related to bond ratings.

The per pupil expenditure for capital outlay was significantly related to bond ratings and emerged as a strong predictor in the regression equations. While the argument could be advanced that city school districts with low per pupil expenditures on capital outlay have lower bond ratings because their bond ratings preclude them from borrowing for capital construction, it is more likely that the districts with higher per pupil capital outlay expenditures have higher bond ratings because they are economically healthier and growing. Per pupil expenditures for capital outlay was only significantly related to bond rating, and was not significantly related to any other

predictor variable. Even its relationship to per pupil expenditure for interest on debt was weak and insignificant.

The percentage of school district revenues coming from state and federal sources was not significantly related to either bond ratings or fiscal stress. High dependence on intergovernmental revenues does not seem to create enough financial instability to cause fiscal problems.

The per capita non-education city expenditures, one operational definition of municipal overburden, was significantly related to both bond ratings and fiscal stress. High city per capita spending on non-education functions was related rather strongly to lower bond ratings and higher fiscal stress. This would indicate that municipal overburden is a negative factor in the fiscal health and stability of large urban school districts.

Governance Variable

An argument has been made that fiscally dependent school districts are more vulnerable to fiscal problems because they have less control over their own fiscal affairs and are dependent on the decisions of parent governments. However, in this study no statistically significant relationship was found between school district

fiscal dependency and either bond ratings or fiscal stress. For both criterion variables, fiscal dependency could only account for about four percent of the variance.

Geographic Variables

Two geographic variables were used. One was a dummy variable for the Northeast-North Central region and the second was another dummy variable for the Northeast-East North Central region. The second was merely a refinement of the first. Both were highly and significantly related to both bond ratings and fiscal stress, with the Northeast-East North Central regional variable being the more powerful predictor. Large urban school districts in the Northeast and East North Central regional are much more likely to have lower bond ratings and to be fiscally stressed than districts elsewhere.

Interrelationship of Variables

A pattern emerged from the analysis of the individual predictor variables which would suggest an interrelationship among certain of the variables. This pattern is shown in Table 9, which presents the correlation coefficients among selected variables. These correlation coefficients show a pattern of large urban school districts

Table 9
Correlation Coefficients Among
Selected Variables

	Older Housing	Northeast- E. N. Cent. Region	Workforce in Trade	Median Fam. Income	Change in Fam. Income	Non-Educ. City Expend.	Educ. Attainment
Older Housing	1.00						
NE-ENC Region	.60	1.00					
Workforce in Trade	- .58	- .52	1.00				
Median Fam. Income	- .41	- .28	.49	1.00			
Change in Fam. Income	- .48	- .56	.81	.69	1.00		
Non-Ed. City Expend.	.50	.36	- .54	- .32	- .52	1.00	
Educational Attainment	- .39	- .49	.45	.59	.55	- .14	1.00
Bond Rating	- .56	- .63	.46	.44	.49	- .36	.55
Fiscal Stress	.60	.68	- .39	- .27	- .41	.43	- .36

All Coefficients are significant at the .05 level, except for the relationship between educational attainment and non-education city expenditures.

in which lower bond ratings and high fiscal stress are associated with

1. older housing
2. location in Northeast or East North Central regions
3. low proportion of workforce in trade
4. low median family income
5. low growth in family income
6. high non-education city spending per capita
7. low educational attainment of population

This combination of factors implies low fiscal capacity, poor economic base, high demand on the tax base, and location in a slow growth area of the nation as major factors in fiscal problems.

Predictions of Bond Ratings and Fiscal Stress

For research into the predictors of bond ratings and fiscal stress to have value for policymakers and administrators in public education, reasonable and useful predictions must be produced through the research. The prediction equations yielded numerical estimates for bond ratings and fiscal stress, which are shown in Chapter IV in Table 7. In Table 10 these values have been converted to actual bond ratings and assessments of fiscal stress.

Table 10

Bond Rating and Fiscal stress Predictions

School District	Bond Rating		Fiscal Stress	
	Actual	Predicted	Actual	Predicted
Boston	Ba	A	Yes	Yes
Chicago	B	Baa	Yes	Yes
Cleveland	Ba	Baa	Yes	Yes
Philadelphia	B	B/Ba	Yes	Yes
Buffalo	Baa	Baa	Yes	Yes
Cincinnati	Baa	A	Yes	Yes
Columbus	Baa	A	Yes	No
Detroit	Baa	A	Yes	Yes
New York	Baa	Baa	Yes	Yes
Providence	Baa	Baa	Yes	Yes
St. Louis	Baa	Baa	Yes	No
Baltimore	A	A	No	No
Birmingham	A	Aa	No	No
Hartford	A	Baa	No	Yes
Kansas City, Kansas	A	A	No	No
Las Vegas	A	Aa	No	No
Miami	A	Aa	No	No
New Orleans	A	A	No	No
Oakland	A	Aa	No	No
Pittsburgh	A	Baa	No	Yes
San Antonio	A	Aa	No	No
Albuquerque	Aa	Aa	No	No
Atlanta	Aa	Aa	No	No
Denver	Aa	Aa	No	No
Indianapolis	Aa	A	No	No
Kansas City, Missouri	Aa	A	No	No
Los Angeles	Aa	Aa	No	No
Memphis	Aa	Aa	No	No
Milwaukee	Aa	Baa	No	Yes
Newark	Aa	Baa	No	Yes
Richmond	Aa	Aa	No	No
San Diego	Aa	Aa	No	No
Seattle	Aa	Aa	No	No
Tulsa	Aa	Aa	No	No

Table 10 Continued

Bond Rating and Fiscal stress Predictions

School District	Bond Rating		Fiscal Stress	
	Actual	Predicted	Actual	Predicted
Dallas	Aaa	Aa	No	No
Houston	Aaa	Aaa	No	No
Minneapolis	Aaa	Aa	No	No
Omaha	Aaa	Aaa	No	No
Salt Lake City	Aaa	Aa	No	No

The prediction equation predicted the proper bond rating in nineteen of the thirty nine city school districts in the study. For sixteen of the districts the prediction was wrong by one bond rating category. Nine of the districts were predicted to have a rating one category higher than the actual rating and seven one category lower. The predictions were two categories off for four school districts.

The predictions were better for fiscal stress. The equation predicted the presence or absence of fiscal stress correctly in thirty-three of the thirty-nine large urban school districts in the study. Two stressed districts were predicted not to be stressed and four non-stressed were predicted to be stressed.

Bond Rating Predictions

The two city school districts which had bond ratings two categories lower than predicted were Boston and Chicago. Boston had a bond rating of Ba, but the model predicted an A rating. Boston is a dependent school district under a court supervised desegregation plan and has had political squabbles with the city political leadership. None of these factors have the effect of inspiring the confidence of the financial community.

Chicago was predicted to have a Baa rating, but had an actual rating of B. In 1979, the Chicago school district underwent a fiscal crisis and is under the financial supervision of a state legislated control board. Again, this is not something that would cause the investment world to ascribe high credit quality to the school district. While it is beyond the scope of this study to ascertain the precise causes of fiscal problems, Clark's contention of the importance of political leadership and the local political culture might apply in the cases of both Boston and Chicago city schools.

The two cases where the predicted bond ratings were two categories below the actual ratings were Milwaukee and Newark, both of which had Aa ratings and Baa ratings were predicted. Both are older, Northern cities which have had major economic and financial problems in the past, but appear to be solving some of those problems. This could explain the confidence shown in these city school districts by the financial community.

All three Ohio city school districts in the study had lower bond ratings than predicted. Cleveland had a Ba rating and a Baa rating was predicted. Both Columbus and Cincinnati were predicted to have A ratings, but actually had Baa ratings. All Ohio school districts have been

having difficulties for some time in passing local tax levies and this factor may be important in the judgement of investors that the prospects for prompt and full repayment of debts may be impaired.

Since only one of the four districts with B or Ba ratings were predicted to have ratings that low and two of the five school districts with Aaa ratings were predicted to have ratings that high, there may be a problem with the prediction equation at the extreme ends of the scale. At the extremes, the model predicted bond ratings accurately in only thirty three percent of the cases, but in the middle ranges the degree of accuracy was fifty three percent.

Fiscal Stress Predictions

The prediction equation estimated that Columbus and St. Louis would not be in the fiscal stress category and they were. The case of Columbus was briefly discussed above. It is quite possible that if Columbus did not have the fiscal and legal constraints of Ohio school districts, it would not suffer from the low assessment of credit quality that it does. It is interesting to note that if the equation predicting fiscal stress were used without a regional variable, St. Louis would be classified as

fiscally stressed. While St. Louis is not in the Northeast-East North Central region, it has most of the characteristics of large cities in that region. The prediction equations point that out.

The four large urban school districts which were predicted to be fiscally stressed, but were not, were Hartford, Pittsburgh, Milwaukee, and Newark. If the regional variable were removed from the equation, Milwaukee and Newark would be correctly classified. Either way, Newark was very close to the numerical dividing line between fiscal stress and non-fiscal stress.

While some districts would be more accurately classified without the regional variable, it should be noted that elimination of the regional variable would result in the misclassification of other city school districts. Therefore, the regional variable is an important contributor to the fiscal stress model.

The Value of the Prediction Equations

A high degree of predictive accuracy is not easy to attain in real world settings involving measures and concepts as elusive and controversial as bond ratings and fiscal stress. The results of this research study have shown that it is possible to produce a model which can

produce a relatively high level of predictive accuracy. This study was able to predict fiscal stress accurately in eighty-five percent of the cases and to predict actual bond ratings with forty-nine percent accuracy. The equations predicted bond ratings within a one category range of the actual rating in ninety percent of the cases. A value of this approach is not only its high degree of accuracy, but also its simplicity. The predictions were done with few variables and a single equation for each criterion measure. The research was conducted with conscious attention paid to the value of parsimony.

CHAPTER VI

CONCLUSIONS AND IMPLICATIONS FOR POLICY

Many large city school districts have experienced severe financial problems. Other urban districts have avoided such problems and maintain financial health. There has been a great deal of controversy over how such financial problems came about and how to avoid them. Numerous researchers have addressed aspects of the problem, but have not produced conclusive research which provides a comprehensive view of the phenomenon of fiscal stress in large urban school districts. There has been more research interest in the general area of urban fiscal stress, but this has been of only limited value in predicting urban school district fiscal stress. The purpose of this study was to investigate and examine the predictors of large urban school district bond ratings and fiscal stress, as defined as a bond rating low enough to effectively restrict school district access to normal financial markets. A quantitative analytic approach was taken to determine what demographic, economic, financial, governance and geographic factors would be good predictors of bond ratings and fiscal

stress. The research produced a number of factors which were strongly related to both bond ratings and fiscal stress in large urban school districts. These factors were applied in a series of regression equations and a model was developed to predict both bond ratings and fiscal stress with a relatively high degree of accuracy.

Conclusions

Large urban school district bond ratings and fiscal stress can be predicted by the percentage of older housing in the city, the level of educational attainment of the city population, the school district per pupil expenditure on capital outlay, the city non-education per capita expenditures, and location in the Northeast or East North Central regions of the United States. City school districts with fiscal problems tend to be those in older cities with a population with lower than average education levels and with a high level of city expenditures. These districts have low spending levels for capital outlay. All the cities in the study that were fiscally stressed, with one exception, were in the Northeast or East North Central regions. However, five cities in the region that were studied were not stressed.

While the prediction model was more accurate for fiscal

stress than for bond ratings, the predictive value for bond ratings may be more important. Fiscal stress in a nominal designation; a school district is either classified as being stressed or it is not. Bond ratings have more discrete categories and reasonable prediction of placement in those categories ahead of time can provide useful information. This study has shown that this is possible.

Recommendations for Further Research

Future research might look at the predictive validity of this model at another point in time. For example, it would be important in verifying the use of this approach to predict future bond ratings and fiscal stress using current data and comparing the results to actual information in three years. While these equations worked well in predicting bond ratings and fiscal stress in a period in the early 1980s, conditions may change sufficiently to warrant a different approach or different predictor variables in another period.

The predictive model using these equations also needs further refinement. This study was exploratory in nature to determine if a series of factors could be assembled to make the desired predictions for large urban school districts. Additional research needs to be done to

determine if additional factors or variations on these same factors might increase the predictive power of the approach.

This approach could also be applied through additional research to school districts that do not serve large cities. No claim was made that this study was generalizable beyond the city school districts examined. Further research might expand the use of this approach to other school districts.

Further research could also increase the statistical power of the prediction models through a number of approaches, including (1) replication of this study after an interval of five years, (2) an expansion of the sample to include more city school districts, or (3) use of cluster analysis in the interpretation of the data. An increase in sample size, however, would change the nature of the study because it would result in the inclusion of school districts serving smaller cities than are now included. This would decrease the practical significance of the study for large city school districts.

Finally, research needs to be done into the causes of fiscal stress in large urban school districts. The move from prediction to explanation is a large one, but such research would be important. Since quantitative research

had not proven fruitful in ascertaining causation, a case study approach might be more appropriate in studying causation. This study is only one step in building a knowledge base to allow public managers to avoid fiscal problems. Case studies in the causes of fiscal stress in individual large urban school districts would expand that knowledge base.

Implications for Policy

Studies which satisfy the requirements of researchers in research design and methodology do not always produce knowledge that is in a form to assist policymakers in their decision making about public policies. This study was conducted using sound research techniques, but with a practical eye cast on the information needs of federal, state, and local policymakers who must cope with urban school district financial problems on a regular basis and who are seeking solutions to those problems. As a result, the findings of this study have some important implications for public policy.

The demographic, economic, and geographic factors which emerged as the best predictors of low bond ratings and fiscal stress also happen to be factors which local officials in general government or school districts have no

control over. Local policymakers and public managers have little if any control over the age of city housing, the educational attainment of the city population, or the geographic region in which the city is located. Earlier in this study reference was made to the "blame the victim" explanation of fiscal stress. In the light of these findings, that theory makes no sense. Fiscal problems of large urban school districts seem to be more structural in nature and merit the attention of federal and state decision makers.

The emergence of the high per capita non-education city expenditures as a factor in predicting urban school district fiscal stress supports the contention that urban school districts do suffer from problems of municipal overburden. This has been a controversial topic and one upon which there have been conflicting research findings. This study would support those who argue that states need to recognize and adjust for municipal overburden in state school finance formulas.

The results of this study do not support the claim that urban school districts suffer from financial problems because of large numbers of minority, limited English speaking, and special education pupils. Policies designed

to remedy some of the problems associated with students in these categories, like some desegregation efforts, may actually exacerbate school district financial problems, but race, ethnicity, or special educational needs do not seem in themselves to be particularly associated with fiscal stress.

Likewise, the research results offer no strong support to those who attribute urban school district financial problems to high operating costs brought on by inflated salary and wage costs. The argument that city school districts suffer from the costs of overstaffing and high salaries brought about by powerful unions is not supported by the results of this study. Per pupil expenditure for salaries and wages was not a good predictor of fiscal problems.

A key factor in urban school district fiscal stress is low fiscal capacity. The stronger predictors of fiscal stress were those factors that had an adverse effect on the capacity of the school district to raise revenues. Urban school districts with financial problems had old housing, poorly educated residents, and a generally weak economic base. Solutions to urban school district fiscal problems will require federal or state actions which account for low fiscal capacity in intergovernmental aid formulas. Most

federal categorical aid programs and all state education aid programs have equalizing features, but the evidence is that these do not work well enough. City school districts are still experiencing fiscal problems and low fiscal capacity is a key feature in distinguishing those with severe problems and those without.

Finally, an important policy implication of this study is that there are solutions. Not all urban school districts which were predicted to be stressed did experience fiscal stress. Not all large urban districts in the Northeast and East North Central regions of the United States were suffering from low bond ratings and financial difficulties. Why some of those city school districts were doing better financially was a question that was beyond the scope of this study, but a cursory analysis would at least suggest that knowledge about financial stress and the factors associated with it, political skills in convincing state and federal officials to enact policies to assist urban school districts, and cooperation among those associated with urban school districts to secure adoption of more beneficial policies are all important.

This study was based on the normative proposition that it is good public policy to try to solve the financial

problems which plague many large city school districts. The results of this study should make at least a small contribution to the knowledge base needed to do that. As such, this research has important implications for public policy.

APPENDIX

KEY TO MOODY'S MUNICIPAL BOND RATINGS

The bond ratings used in this study are those published by Moody's Investors Service, Inc. in their Municipal and Government Manual. This appendix contains a description of those ratings as published by Moody's.

Municipal Bond Ratings

Aaa

Bonds which are rated Aaa are judged to be of the best quality. They carry the smallest degree of investment risk and are generally referred to as "gilt edge." Interest payments are protected by a large or by an exceptionally stable margin and principal is secure. While the various protective elements are likely to change, such changes as can be visualized are most unlikely to impair the fundamentally strong position of such issues.

Aa

Bonds which are rated Aa are judged to be of high quality by all standards. Together with the Aaa group they comprise what are generally known as high grade bonds.

They are rated lower than the best bonds because margins of protection may not be as large as in Aaa securities or fluctuation of protective elements may be of greater amplitude or there may be other elements present which make the long-term risks appear somewhat larger than in Aaa securities.

A

Bonds which are rated A possess many favorable investment attributes and are to be considered as upper medium grade obligations. Factors giving security to principal and interest are considered adequate, but elements may be present which suggest a susceptibility to impairment sometime in the future.

Baa

Bonds which are rated Baa are considered as medium grade obligations, i.e., they are neither highly protected nor poorly secured. Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well.

Ba

Bonds which are rated Ba are judged to have speculative elements; their future cannot be considered as well assured. Often the protection of interest and principal payments may be very moderate, and thereby not well safeguarded during both good and bad times over the future. Uncertainty of position characterizes bonds in this class.

B

Bonds which are rated B generally lack characteristics of the desirable investment. Assurance of interest and principal payments or of maintenance of other terms of the contract over any long period of time may be small.

Caa

Bonds which are rated Caa are of poor standing. Such issues may be in default or there may be present elements of danger with respect to principal or interest.

Ca

Bonds which are rated Ca represent obligations which are speculative in a high degree. Such issues are often in default or have other marked shortcomings.

C

Bonds which are rated C are the lowest rated class of bonds, and issues so rated can be regarded as having extremely poor prospects of ever attaining any real investment standing.

Con. (-)

Bonds for which the security depends upon the completion of some condition are rated conditionally. These are bonds secured by (a) earnings of projects under construction, (b) earnings of projects unseasoned in operation experience, (c) rentals which begin when facilities are completed, or (d) payments to which some other limiting condition attaches. Parenthetical rating denotes probable credit stature upon completion of construction or elimination of basis of condition.

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