THE IMPLICATIONS OF PROPOSITION 2-1/2 FOR THE MUNICIPAL BOND MARKET IN MASSACHUSETTS

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ABSTRACT

The operation of the municipal bond market is reviewed for the purpose of explaining in what way and to what extent the provisions of the tax limit law will affect this market. A stepwise multiple discriminant analysis program was run on a sample of 143 cities and towns to disclose the statistically significant determinants of bond ratings prior to enactment of Proposition 2-1/2. Building upon this analysis, the prospects for future municipal borrowing under the new revenue constraints were examined.

The statistical analysis indicated that communities with a high-yield tax base (low tax rate with high tax per capita) tended to have better ratings. A high proportion of total revenue derived from the property tax was also associated with higher bond ratings. Evidence from the data along with interviews with specialists in the field of municipal bond financing led to the conclusion that the tax limit law will create severe borrowing difficulties for the larger cities facing repeated tax reductions over several years. Many smaller well-off communities will be minimally affected in approaching the bond market.

The conclusion appraised the options available to mitigate the negative bond market impacts. State legislative remedies are reviewed, as are local initiatives in fiscal management. Alternatives to the general obligation bond as a finance instrument are considered, but are of limited value in overcoming the current limitations to bond market access by Massachusetts cities and towns.

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CHAPTER I. INTRODUCTION

The purpose of this paper is to assess the likely impacts of Proposition 2-1/2 on the municipal bond market in Massachusetts, and to identify policies and options at the state and local level that can by invoked to minimize the negative impacts. The views of a variety of actors and interest groups have been solicited in order to identify the full breadth of opinion on the subject. My intention is not so much to make specific recommendations as to explore and explain the ramifications of Proposition 2-1/2 and related events on the bond market. Where legislative remedies are discussed, the focus is kept rather narrowly on the bond market, although some legislative proposals impinge upon other concerns as well.

Chapter 580 of the Acts of 1980, popularly known as Proposition 2-1/2, is a statutory proposal that was enacted in Massachusetts on November 4, 1980. This initiative bill is a multi-faceted law that limits local revenues by imposing a 2-1/2% limit on property taxes and by reducing the auto excise tax from 6.6% to 2.5%. Proposition 2-1/2 was sponsored by the tax-cut advocate group, Citizens for Limited Taxation, with support from business associations including the High Technology Council and Associated Industries of Massachusetts. The bill has numerous provisions in addition to the local tax limits, including a state tax deduction for renters, restrictions on state mandates to local governments, and abolition of school fiscal autonomy and of binding arbitration for police and fire personnel. A detailed description of the act is included in Chapter VI. The most important

aspects of the law for this thesis is the strict 2-1/2% property tax levy limit, from which no portion of the local budget is exempted.

Proposition 2-1/2 appears to have already had some impact on city and town access to the municipal bond market. While it is safe to say that no community has entirely escaped impact, there are significant differentials in the scope and intensity of the impacts experienced by cities and towns. One impact that will affect every municipality is the strict 2-1/2 percent property tax limit, that seems likely to reduce investor confidence in local capacity to repay long-term debts. This switch in the security status of new and existing debt is expected to reduce investor preference for Massachusetts local government's debt instruments. Investors prefer securities that have low risk of payment default, and which can be readily liquidated in the secondary trading market if so desired.

Some cities and towns, furthermore, are facing more severe fiscal conditions relative to other communities- a fact that was dramatically demonstrated on March 29, 1981, when Moody's Investors Service suspended ratings on 37 selected cities and towns as well as 7 school and sewer districts. It is widely assumed that when ratings are reinstated by Moody's, a number of municipalities will be downgraded in rating.

This thesis describes the municipal bond market in some detail to aid in understanding how and why Proposition 2-1/2 will affect the bond market. This tax limit legislation comes at a time when the money market nationwide is in a state of turmoil, with unprecedented

high interest rates for municipal borrowing. Part I presents an overview of the national market conditionsas a contextual backdrop for analysis of the problems now faced by communities in the Commonwealth.

The tax exempt bond market is a complex and dynamic stage on which these events will unfold. The interactions between the municipal borrowers (i.e. the supply sector of the municipal bond market) and the demand sector (underwriters and investors) have evolved over time with major trends periodically altering the dominant actors and modifying their respective roles. The tax exempt bond market attracts tax shelter-seeking investors- primarily commercial banks, institutional investors, and individuals. Each of these demand segments has responded to changes in the economic and regulatory environment over the years, moving into or out of the municipal market as conditions warrant. On the supply side, the state and local government debt has grown steadily in volume over the past decade, (from $144.4 billion in 1970 to $312.7 billion in 1979*), whilethe composition of debt issues- the types of bonds and the purposes to which the funds raised are put- has changed dramatically in recent years. Part I reviews these national trends and introduces some of the controversial issues of regulatory reform that have confronted legislators in recent years.

Part II looks at the linkages between Proposition 2-1/2 and the municipal bond market by examining the situation from the perspective of bond market actors. I consider the investor, who will determine

*See Table 3 in Chapter IV, below.

at what price he will be willing to enter the market for Massachusetts bonds in the future. Holders of existing local debt find themselves suddenly in the position of holding bonds that have a less secure backing than they did at the time of purchase. Because there has been very little secondary market demand for Massachusetts certificates following the passage of Proposition 2-1/2, these holders must retain their notes for a longer term, perhaps until maturity, to avoid incurring a loss. The lack of demand in the secondary market potentially destroys the high liquidity of affected investments, and the expectation of liquidity is an important criteria for choosing investments. This situation has already resulted in what one spokesperson for E.F. Hutton & Co., Inc. has termed a "credibility gap" created for Massachusetts by enactment of Proposition 2-1/2. This term is used because the terms of sale for existing debt specified that the debt was secured by an unlimited taxing power for the life of the bond. With passage of Proposition 2-1/2, the state had, in effect, reneged on these contracts, which raises some interesting legal questions that will be discussed.

My focus then shifts to the cities and towns in Massachusetts. Much is heard about the terrible consequences of Proposition 2-1/2 on municipalities, and often these cries are met with charges that local officials are playing a game of brinksmanship. The fiscal hardships induced by Proposition 2-1/2 are real, and they will be exacerbated by the dramatic reductions in federal assistance that are forthcoming. These institutional changes, furthermore, overlie a national economy that has been chronically unsettled since the Vietnam War days, with

persistently high levels of inflation and unemployment. A look at the fiscal conditions of Massachusetts municipalities prior to passage of Proposition 2-1/2 will provide a clearer perspective from which to evaluate the bill's impact.

Using readily available data from the census and from state agencies, a statistical description of local fiscal circumstances in 143 of the 351 communities is undertaken. These 143 municipalities, (those with population of 10,000 or greater in 1970), will be grouped according to such attributes as size and change in population. Within these relatively homogenous clusters, indicators of fiscal condition and vulnerability to the restrictions imposed by Proposition 2-1/2 will be examined.

It appears that a number of localities have fared well economically and will continue to do so despite these tax restrictions. Some cities, however, are beset by difficulties that will be compounded by loss of revenues, while others have reached a precarious fiscal balance that could possibly be upset by compliance with Proposition 2-1/2. If any Massachusetts city or town enters a full-scale fiscal crisis, or even misses a number of contractual debt service payments, the entire state might be stigmatized in the eyes of potential investors in the municipal bond market.

The 37 communities that have suffered ratings suspensions, as well as other cities that might also be in jeopardy, are uncertain as to what are the most important determinants of bond ratings. Using the fiscal data that has been collected, the pre-2-1/2 bond ratings are investi-

gated by discriminant analysis to uncover the most significant variables. It is not surprising to find the effective property tax rate and property tax payments along with the percentage of homes that are owner-occupied, are the strongest of the variables tested. It is impossible to predict, however, what bond ratings will be when they are reinstated.

To some extent the bond market impacts have already begun to be felt. Investors are very sensitive to such negative circumstances as the suspension of ratings and the credibility gap problems described above. Market disruptions of any significant magnitude are not soon forgotten on Wall Street. The degree of market disruption that will ensue is dependent upon what, if anything, the legislature comes up with to alter the provisions of Proposition 2-1/2.

In response to the question of what should be done by the legislature, a theme that has been repeated frequently, especially by members of the investment community, is that a comprehensive reform, or overhaul of the state's tax structure is necessary. It is felt that little will be accomplished by continuing to pursue incremental tax-law changes such as Proposition 2-1/2 and other recent changes in the system. Despite this conviction that a comprehensive approach is the only way toward a "real" solution, most observers are waiting expectantly and impatiently for "corrective" legislation that will rectify some of the perceived problems in 2-1/2.

Part III turns to the question of what the state legislature and and local government officials can do to ensure that capital improvements financing capacity at the local level does not disappear or become prohibitively expensive relative to other states. In this section,

the federal government is treated as an exogenous force whose actions are beyond the control of Massachusetts interests. The emphasis at the state level is on amendments to Proposition 2-1/2 that have been proposed by the Legislature's Taxation Committee, chaired by Rep. Gerald Cohen (D-Andover). Some of the amendments that will be considered include: 1) a proposal that would allow a community to reduce its tax levy by 7-1/2 percent per year until the 2-1/2 percent rate is reached, rather than by 15 percent per year; and 2) elimination of the "no-growth" provision of Proposition 2-1/2 by allowing the tax levy to increase when new development is added to the tax base.

The local initiatives include lobbying (at the State House), planning (for an efficient and convincing capital improvements program), management, public relations, and disclosure of fiscal information. Of course, the most immediate action that localities can take is inaction- postponement of long-term borrowing until the smoke clears and the cost of capital declines. (The borrowing costs are so high, as this is written, that postponement of capital improvements would occur even without 2-1/2.)

Given the creativity demonstrated by local borrowers in recent years that has expanded the scope and function of municipal borrowing into many new areas, one might hope that some of the recent innovation in forms of municipal bond offerings will prove useful to the suffering cities. A number of financing techniques, some of which would require state enabling legislation, are examined as possible or partial solutions to Massachusetts local capital problems. Negotiated private placements of local bond issues with local banks and institutions will help some com-

munities finance capital improvements. Alternatives to the general obligation bond- including revenue bonds of various types, bond banks, tax increment financing, and special assessment districts are considered. But these financing schemes do not seem to overcome the basic constraint of a limited taxing authority.

Mayor Kevin White has stated that the problems faced by Boston are fundamentally political rather than economic ones. Clearly Proposition 2-1/2 came about as a result of a political process, and any remedies involving legislative action must be viewed in this highly politicized environment.

PART I

THE NATIONAL CONTEXT

CHAPTER II. THE FUNCTION OF THE MUNICIPAL BOND MARKET

A Historical Overview of the Municipal Bond Market in the U.S.

The municipal bond market brings state and local government borrowers, in need of large scale, long-term capital resources, together with private sector investors. State and local governments have incurred long-term debt to finance capital intensive infrastructure improvements since before the Civil War.[1] The traditional purposes to which bonded funds have been applied include such major long-term investments as transit systems, water and sewer systems, and school facilities. Long-term borrowing is necessary for such projects because current revenues are inadequate to cover the large construction costs, or it would require too large of a tax increase to fund these projects on a pay-as-you-go basis. It is also felt that the construction costs of a facility should be spread over its useful life, so that the future beneficiaries of the inprovements will also share in the expense of providing them.

To secure long-term financing for capital improvements, the local government entity endeavors to sell a bond for the amount required. An important feature of local bonds is the federal tax-exempt status of income earned from interest payments by state and local governments to the investors.

The concept of "reciprocal immunity"[2] holds that as states are unable to tax federal activities, then neither shall the federal government have

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[1] Moak, Lennox L., Administration of Local Government Debt, Municipal Finance Officers Association, Chicago, 1970, p. 9.

[2] Rabinowitz, Alan, Municipal Bond Finance and Administration, Wiley-Interscience, New York, 1969, p.118.

power to tax state or local government activities. This tax-exempt status of municipal bonds has created a specialized demand for such securities, by investors who face high marginal federal tax rates. Thus municipal borrowers have a ready, although somewhat limited, market for their bonds. The pre-tax yield (i.e. interest rate) on municipal bonds is generally several percentage points lower than that of comparable taxable securities. This differential translates to the reduced cost of capital for state and local borrowers relative to the private sector. The term "municipal bond market" encompasses transactions involving many forms of tax exempt securities, issued by state, local, county or other governments and local public authorities.

The volume of borrowing by state and local governments has grown immensely over the last 150 years or so. Boston exemplifies the national trend, starting with a bonded debt level of just $100,000 in 1822, which grew to more than $1,500,000 by 1840.[3] By June, 1980, Boston's total net debt outstanding was $542.3 million.[4] The volume of state and local debt has grown at a comparable rate nationwide over this period, but this growth trend was interrupted by economic depressions that occurred in 1837, 1873, 1893, and 1929.[5]

The early period of heavy local borrowing, before the 1873 crash, was part of a flurry of construction and reconstruction activities related to the Civil War. There was a fervor to those improvement plans

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[3]Op. Cit., Moak, p. 9.

[4]Commonwealth of Massachusetts, Dept. of Revenue, Bureau of Accounts, 1980.

[5]Hempel, George H., The Postwar Quality of State and Local Debt, National Bureau of Economic Research, New York, 1971, p. 6.

that was fueled in part by competition between state and local governments for economic development. It was assumed that once the rail links or other improvements were in place, economic development would follow. With the 1873 depression came widespread default on these rather speculative project bonds.

In the aftermath of the 1873 depression, local borrowing was much more carefully controlled by regulations enacted by most states. Nonetheless, a surge of local borrowing preceded the Great Depression, and again, the fallen economy drove a number of municipal borrowers into arrears on payments of principal and interest. Default in the municipal bond market occurs as a continuous yet very small percent of the amount of debt outstanding. Major episodes of serious and widespread default, however, have been coterminous with historically significant economic downturns. The level of activity and the default risk in the municipal bond market both appear to be pro-cyclical. Borrowing levels increase with the boom period that frequently precedes a downturn. The "roaring twenties" were characterized by economic growth, much of which was fueled by speculative investments in anticipation of further growth. Just as the stock market action was built upon a paper shell of credit not backed by solid security, so was much local investment secured by the expectation of rising property values. Special Assessment bonds secured by a surcharge on the taxes of benefited properties were used to finance subdivision improvements. The bond issues for these improvement plans were predicated on the assumption that residential growth and private investment would follow the capital improvements. The debt

service payments were to be derived from the flow of revenue generated by the projected increase in the property tax base.

This mode of financing improvements can be a responsible financing strategy on the part of local governments, depending upon how speculative are the growth projections, and what constitutes the security behind the debt instrument. Every capital improvements program is designed around a forecast of demand for the service: be it a highway, a water system, or a school or playground. The security behind a bond issue is the local revenue source that is pledged toward repayment of the debt principal and interest.

The term "general obligation bond" refers to bonds that are secured by the full faith and credit of local revenue sources- chiefly tax revenues, which are pledged to guarantee the principal and interest payments to the bond holder. Typically, the general obligation bond is backed by an unlimited local government taxing power. In recent history, however, a number of states have enacted strict tax limitation legislation- most notably Proposition 13 in California in 1978 and recently including Proposition 2-1/2 in Massachusetts. These laws impose a limit on the rate of local government property taxation, and on other local revenue sources. It is therefore necessary to make a distinction between general obligation bond issues backed by an unlimited taxing power, and a relatively new category of general obligation bonds backed by a limited local taxing power.

In addition to general obligation bonds, there are bonds that are secured by the pledge of revenues projected to be generated by the pro-

ject itself. These bonds, called "revenue bonds", are frequently used to finance public utilities such as energy, water, and sewer systems, to which a user fee can be attached which makes up the revenue stream that secures the debt.

Whichever type of bond is used, the risk to the bondholder (the investor who lends the money to the municipality in exchange for the promise of a schedule of repayments with interest), is that the revenue source that has been pledged to secure the debt will not materialize or will be insufficient to meet the debt service payments. If the repayment of principal and interest does not occur on schedule as agreed at the time the bond is sold, then the bond is in a state of default. While bond default of any kind is viewed with great alarm by investors, there is a broad range of default conditions that have occurred historically, from delays in payments to repudiation of debt. A "major default situation" is one that is not a "technical" or temporary default condition, and one that involves the failure to pay principle or interest on a debt of one million dollars or more.[6]

Looking back at the default conditions that occurred prior to World War I, the most serious permanent losses are attributable to the defaults of 1873-1879, following a period of quite speculative and uncontrolled local investments. The basic attributes of the pre-World War II municipal bond market are best summarized by a table in George

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[6]Advisory Commission on Intergovernmental Relations, City Financial Emergencies: The Intergovernmental Dimension, Washington, D.C., 1973, p.16.

H. Hempel's The Postwar Quality of State and Local Debt,[7] which is reproduced below as Table 1.

TABLE 1

Comparison of the Extent of Defaults by State and Local Units in Major Default Periods
(dollar figures in thousands)

Period	Average State and Local Debt Outstanding	Total Indebtedness of Defaulting State and Local Units	Per Cent of Debt Outstanding	Past Due Interest and Principal[a]	Per Cent of Debt Outstanding	Loss of Principal and Interest[b]	Per Cent of Debt Outstanding
1837-43	$ 245,000	$ 125,000	51.0	n.a.	—	$ 15,000	6.1
1873-79	1,000,000	245,000	24.5	n.a.	—	150,000	15.0
1893-99	1,300,000	130,000	10.0	n.a.	—	25,000	1.9
1929-37	18,500,000	2,850,000[c]	15.4	320,000[c]	1.7	100,000	.5

Source: Based on data from George H. Hempel, "The Postwar Quality of Municipal Bonds" unpublished dissertation, University of Michigan, 1964, pp. 84-161.

[a]Does not include interest on unpaid interest.

[b]Does not include interest on unpaid interest, interest due after a debt was repudiated or interest lost due to refunding at a lower interest cost.

[c]Overdue interest plus debt upon which interest is in default was $1,355,000 or 7.3 per cent of debt outstanding in 1929-37. This figure is not available for the earlier default periods.

n.a. = not available.

The 100 year period from 1837 to 1937 can be characterized as the reckless youth of the municipal bond market in the United States. The rapid growth in state and local debt as well as the turbulence over the period are evident. Given the severity of the Great Depression, with its bank closings, it is somewhat surprising that a larger proportion of state and local indebtedness did not enter into default. The relatively low levels of permanent losses that resulted indicates that the institution of the municipal bond market was moving toward increased

[7]Hempel, George H., The Postwar Quality of State and Local Debt, National Bureau of Economic Research, New York, 1971, p. 32.

investor security and municipal responsibility. The volume of default, however, revealed that renewed caution and conservatism were called for in the recovery that followed World War II.

In the years immediately following the Great Depression, the municipal bond market was relatively stagnant. Total local government indebtedness went from $15.7 billion in 1934, to $16.7 billion in 1940, and was reduced by wartime restrictions on capital investment to $13.6 billion in 1946.[8] These restrictions created a condition of pent-up demand for state and local capital improvements that was unleashed in the period following the war.

Chart 1 shows the steady growth in state and local debt outstanding from 1952 to 1978. This figure depicts graphically the composition of state and local debt according to Bureau of the Census categories. The lower region shows local debt segmented into long-term "full-faith and credit" (i.e. general obligation) and "non-guaranteed" long-term (generally including revenue bonds and special assessment bonds) plus short-term debt, which is shown separately after 1967. State debt overlies the local debt and is similarly categorized, except that short term state debt is grouped with non-guaranteed debt.

In 1955, state and local debt outstanding totalled to $44.5 billion, of which $33.1 billion, or 74 percent, was local debt. Of the local debt in that year, 74 percent was backed by the full-faith and credit of local taxing power. By 1965, state and local debt together had more

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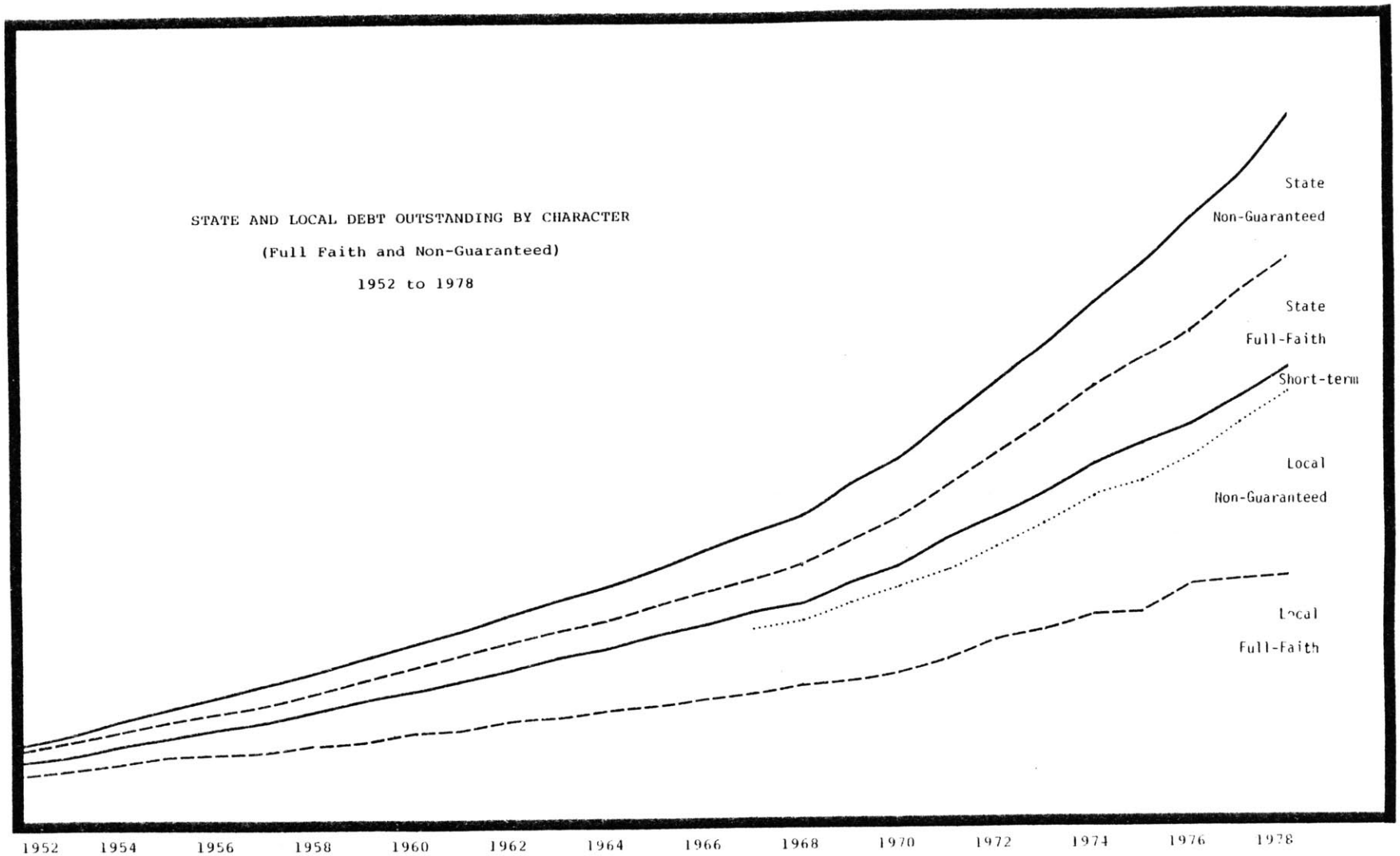
[8]Op. Cit., Moak, pp. 11-12.

CHART 1



Source: "Statistics on State and Local Government Finance", Vol. 18, 1980. (Compiled by "The Daily Bond Buyer" from bulletins issued by the Bureau of the Census entitled "Governmental Finances").

than doubled, reaching $99.5 billion, of which the local portion was $72.5 billion or 73%. The share of local debt that was secured by full faith and credit had declined to 61 percent in 1965. Data for 1978 show some interesting trends. The total debt had increased to $280.4 billion with the local share declining to 63%. Of the 177.9 billion in local debt, the full faith and credit share had fallen still further to 54 percent.[9]

To summarized the trends, it is evident that while both state and local borrowing have grown steadily and strongly from 1952 to 1978, the state debt has grown somewhat faster than has the local debt. There has been a significant shift in local debt towards revenue bonds and other "non-guaranteed" issues, as well as some increase in short-term debt, especially between 1970 and 1978.

[9]The Bond Buyer, "Statistics on State and Local Government Finance", Joan Lulkovich, Ed., Vol. 18, 1980, New York, p. 8.

CHAPTER III. TRENDS IN THE SUPPLY OF MUNICIPAL BONDS

The Joint Economic Committee Report on Public Facility Financing explains the emerging local trend toward alternatives to general obligation bonds as follows:

> "The declining relative use of general obligation bonds may be attributable to (1) the narrow spread in interest costs between general obligation and revenue bonds; (2) the growth of public authorities that issue bonds payable solely from revenues of income-producing properties; (3) constitutional, statutory, and home rule charter limitations on general obligation indebtedness (usually expressed as a percentage of the assessed valuation of taxable property); and (4) the comparative ease of authorizing revenue bonds (no approval by the electorate required and no tax increase need be voted upon)."[10]

The term "revenue bonds" and the Census Bureau's term "nonguaranteed debt" both describe local debt instruments that are not secured by governmental general revenue sources, but depend instead on some other revenue stream for debt service payments. Most, but not all, of these instruments are secured by revenues guaranteed by charges against the beneficiaries of the improvements, rather than from the general funds. This chapter identifies the range of mechanisms that have evolved to produce a variety of debt instruments that fall into the "nonguaranteed" or "limited obligation" category.

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[10] The U.S. Congress, Joint Economic Committee, Subcommittee on Economic Progress, State and Local Public Facility Needs and Financing, Vol. 2, Public Facility Financing, U.S. Government Printing Office, Washington, D.C., December 1966, p. 8.

Special Assessment Bonds

One method for financing improvements that obligates the beneficiaries to meet the debt service requirements is the "special assessment" bond. This financing mechanism applies an extra tax assessment against property that receives direct benefit from the improvement, such as assessments against property owners for curbs and gutters in residential areas. These bonds lost popularity after the defaults that occurred during the Great Depression. Many of the defaults were special assessment bonds for subdivision improvements for which the projected revenue did not materialize.

It has been suggested that one reason special assessments have not become more prevalent in the United States is that the affected property owners are unwilling to approve investments that will generate a long-run benefit but will incur a near-term loss or financial outlay. Donald C. Shoup has suggested a modification of the special assessment, that would allow property owners to defer payment for improvements (subject to an added interest cost) until such time as they sell their house and thereby capitalize the benefits derived from the improvement.[11] This "deferred special assessment" scheme may eventually gain a position in public facility financing, but special assessments of any kind are not widely used today in the U.S.

Special Tax Bonds

The mechanism of "special tax" bonds uses revenues derived from

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[11] Shoup, Donald C., "Financing Public Investment by Deferred Special Assessment", National Tax Journal, Vol. XXXIII, No. 4, Tax Institute of America, Columbus, Ohio, Dec. 1980, pp. 413-429.

a special tax against some product or service, such as an excise tax, general sales tax, or a franchise. A few states rely on this mechanism extensively to finance capital spending. For example, Alabama and Florida use cigarette taxes to support bond issues. Some cases of special tax bonds link the revenue source to the type of improvement, such as gasoline taxes used to secure highway improvement bonds. From the investor's viewpoint, it is desireable if the revenue source is used solely to secure bonds, so that no competing demands will jeopardize the funds needed for debt service payments.

Enterprise Revenue Bonds

The two debt instruments discussed above should not be confused with "enterprise revenue bonds", which are secured by charges of fees collected from actual users of the facility. Enterprise revenue bonds and another system called "lease-rental bonds" make up the lion's share of so-called nonguaranteed state and local debt. (While enterprise revenue bonds are here distinguished from these other revenue based instruments, it is common usage to categorize all of these bond types together as "revenue bonds".)

The rising importance of revenue bonds of varying design can be attributed to the desire of municipalities to avoid state-imposed debt limitation and the other factors mentioned in the above Joint Economic Committee (JEC) excerpt. Another very important factor has been the ever expanding view of the courts (and of the Internal Revenue Service) as to what constitutes a legitimate "public purpose" investment thereby eligible for tax-exempt status for borrowing purposes. Another

writer in the JEC volume of public facility financing, Frank Curley, elaborated on this influence on revenue bond utilization:

> "Probably the single most important development in revenue bond financing in the past two decades has been the broadened concept of public purpose- the object for which such bonds may lawfully be issued by a municipal or public corporation. Prior to 1946, certain municipal utility services, such as electricity and water, were recognized in a number of states as legitimate purposes for municipal revenue bond financing. Toll roads and bridges, though not yet widely financed by this means, were generally accepted. With the increasing demand following the war for public services and improvements without a corresponding increase in the tax burden, legislatures have authorized and courts have approved as public purposes a variety of facilities and undertakings scarcely contemplated in prewar years. Airports throughout the country have been constructed or expanded through the issuance of revenue bonds secured by long-term leases with participating airlines. Public parks and recreation areas and facilities have been successfully financed with revenue bonds, as have stadiums and public sports facilities. Huge power projects have been erected on the Nation's major rivers as a result of revenue bond financings, in many cases by public authorities or corporations. Rapid transit facilities, a world trade center in New York City, and various other public improvements are being financed through revenue bonds."[12]

A trend in enterprise revenue bond financing is the increased role to entities such as public authorities and special districts. These authorities resemble private corporations in structure, although they are creations of the public sector, set up to construct and operate large-scale public service enterprises. While most such authorities are subsidized out of local general revenues of one or more jurisdictions, the managerial independence insulates these corporations from general purpose claims by local governments upon operating revenues. This insulation increases the value of such oper-

[12] Op. Cit., Joint Economic Committee, p. 157.

ating revenues as a security with which to back enterprise revenue bonds. Examples of such enterprises in Massachusetts include the Metropolitan Boston Transit Authority (MBTA), Massport, the Metropolitan District Commission (MCD), the Massachusetts Turnpike Authority, and the recent addition of Massachusetts Municipal Wholesale Electric Company (MMWEC)- all of which are interjurisdictional in scope. (Boston has recently created the Water and Sewer District, a "sub-local" district, the advantages of which will be discussed in a later section.)

Lease-Rental Bonds

One further trend that was recognized as a major contribution to the tax exempt bond market by the JEC in 1965 is the growth in lease-rental financing of both public and private enterprises. The lease-rental arrangement originated in the 1930's when it was conceived as a device to stimulate economic growth in the then-depressed southern states. Variously called industrial development bonds (IDBs), industrial aid bonds, or industrial revenue bonds (IRBs), these debt instruments are issued by local government agencies to purchase or construct industrial parks, plants, equipment, etc., which are subsequently leased to private enterprise. The lease payments are at levels consistent with the debt service requirements and thereby make up the security behind the lease-rental bond issue. Such an arrangement is advantageous to the private corporation because of the lower tax-exempt finance costs. Further benefits to the private operator can be designed into the arrangement by allowing the private partner to establish some equity in the facility either by contributing capital, or more usually, by having the

lease payments function as long-term purchase payments. The private partner is then able to depreciate the plant and equipment for federal tax purposes, which is not a possibility available to local governments, since they pay no federal taxes.

The intention and public purposes behind these lease-rental bond issues is to promote employment and economic development by encouraging expansion and recruitment of private businesses, usually industry in the early years. The first such bond, for the amount of $85,000, was issued in 1936 as part of Mississippi's "balance agriculture with industry" (BAWI) plan.[13]

Very little use was made of IDBs until 1951, although several southern states passed the necessary enabling legislation to facilitate these issues. Pre-1951 IDB volume amounted to only $5.7 million cumulatively. The innovation spread in that year, however, and between 1951 and 1965, 30 states enacted IDB enabling legislation and the volume of IDB issues grew to $729 million cumulatively by 1965.[14] As the use of these bonds to entice private enterprise became more popular over this period, increasingly many states felt the pressure to follow suit in the interstate competition for economic development- if only to retain their exising economic base. Currently, 46 states, (including Massachusetts in 1967), have enacted legislation to issue IRBs. Recent high interest rates accompanied by unusually wide spreads between tax-

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[13]Ibid, p. 162.

[14]Ibid, p. 163.

exempt and taxable interest rates have spurred the use of IRBs in 1979 and 1980.[15]

Growth in IRBs since 1965 has been dramatic. The Congressional Budget Office conducted a study which estimated the volume of IRBs in 1975 at $1.2 billion, in 1978 at $3.5 billion, and in 1979 at $7 billion.[16] The federal government intervened to reduce the volume of IRBs in 1968, by changing the U.S. tax code to set a $1 million limit per project funded by an IRB. No limits, however, were placed on projects for pollution control, sports, transportation facilities, and industrial parks.[17] According to data reported in the National Journal, this growth resulted in an increase in the share of tax-exempt bonds accounted for by IRBs from an insignificant portion in 1970 to almost 15 percent of the volume of tax-exempt issues in 1979.

The growing value of industrial revenue bonds has fueled the continuing controversy over what constitutes a legitimate public purpose for the issuance of tax-exempt bonds. Tax-exempts are fundamentally a federal subsidy in the form of a tax expenditure- an expense that takes the form of foregone tax revenues rather than a direct expenditure from the U.S. Treasury. The costs of such a federal subsidy are largely

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[15] Congressional Budget Office, "Study of Industrial Development Bonds: Some Preliminary Findings", Unpublished preliminary summary. Congressional Budget Office, 1980, p. 2.

[16] Samuelson, Robert J., "Industrial Revenue Bonds- Economic Boon or Public Rip-off?", National Journal, October 1980, p. 1750.

[17] Black, Rebecca R.W., Andrew Reamer, Joseph Soley, and Richard Whitman. "An Examination of the Industrial Revenue Bond Program in Massachusetts", Unpublished paper, Massachusetts Institute of Technology, December 1980.

hidden costs- they appear nowhere in the federal budget, yet they represent a draw on the treasury estimated at $1 billion in fiscal year 1981.[18] Other costs associated with IRB's include exemption of these bonds from state income taxes (in most states) and, in some states, exemption of IRB-financed facilities from local property and sales taxes. Perhaps the most important cost of IRBs, and probably the most difficult cost to calculate, is the inflationary impact on the cost of state and local borrowing for traditional public purposes, such as roads, schools, and sewers.[19]

Even if the growth in IRBs is costing state and local governments more when they issue their own bonds, government officials at these levels are anxious to retain the unconstrained power to issue IRBs. Congress is justifiably concerned about the mounting federal expense, and because IRBs are extensively used for what Ohio Senator Howard Metzenbaum calls "frivolous uses." Although originally conceived to generate industrial investment in needy areas, commercial uses for IRBs abound, including bond issues to finance Wendy's and McDonald's hamburger outlets, K Mart department stores, and Revco drug stores to name a few of the most prominent examples.[20] The argument over IRBs continues, and federal legislation might alter the rules of the game in the future. Until such time, however, the IRBs will continue to flourish for a variety of private projects. So long as states surrounding

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[19] Op. Cit., Samuelson, p. 1749.

[20] Dun's Review, "The Controversy Over Industrial Revenue Bonds Heats Up Again", September 1980, pp. 70-72.

Massachusetts are actively courting private enterprise by offering tax-exempt financing, it is assured that Massachusetts will stay in the IRB game also. Given that IRBs are estimated to comprise 15% of the tax-exempt bond market, and given that the demand for tax exempts is limited, then the concern over the rising costs of tax-exempt bonds induced by IRB issues is justified.

Other forms of lease-rental obligations include Pollution Control Bonds (PCBs), and authority financing bonds. All lease-rentals are legally supported under the "executory contracts doctrine." This doctrine is explained by Wade S. Smith as follows:

> "The relevant consideration of the executory doctrine is that, legally, a lease does not create a long-term debt, because it is executory in nature. The lessor must make the leased facility available, fit for its intended use...as the lease contract sets forth... The lessee is required to pay rent as due... in accordance with the contractual undertaking...The contract is enforceable by either party only to the extent that party executes its respective parts of the agreement. As long as rent is collected annually, the debt thereby created does not extend beyond that year. Hence, bonds secured by a lease do not create a debt extending beyond one year, constitutional or statutory restraints on the incurring of indebtedness are bypasses, and another class of "non-debt" debt exempt from the usual restraints is created."[21]

Lease-rentals are a device by which restraints on both the amount of local debt and the purpose for which debt is incurred are bypassed. Pollution Control Bonds have been in existence since 1973. They were conceived to provide financial assistance and incentive for private industry to comply with federal environmental legislation enacted between 1969 and 1972. The actual purpose for which PCBs are used, how-

[21] Smith, Wade S., The Appraisal of Municipal Credit Risk, Moody's Investors Service, Inc., New York, 1979, p. 184.

ever, has a resemblance to IRBs, in that they are used to attract industry to a region.[22] The actual volume of PCBs is hard to estimate because many such issues are private placements that do not get reported to sources like the Bond Buyer. Using Bond Buyer statistics as a base line, however, it is estimated that PCB volume has grown from $2.1 billion in 1973 to $2.9 billion in 1979, with a peak of $3.9 billion in 1977.[23] According to two econometric studies, one by the Harvard Institute of Economic Research, and another by the Urban Institute, the impact of PCBs on total tax-exempt interest rates is estimated to be between 30 and 85 basis points respectively.[24] (One basis point equals 1/100th of one percent.)

The other form of lease rental bond which is widely used involves a public corporation to issue debt and construct a facility that is leased back to the local government. The lease-back payments cover debt service payments as they do for IRBs. Generally the ownership of the facility is transferred to the local government when the debt is retired. Schools, hospitals, and other public facilities have frequently been financed through lease-rental bonds issued by special authorities.

Because of varied reporting practices for tax-exempt bond issues, exact data on the types and purposes of bonds are not available. The Bond Buyer publishes an annual statistical report that encompasses

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[22] Leung, George W., An Analysis of the Municipal Bond Market, Factors Influencing Municipal Bond Participation; Unpublished Masters of City Planning Thesis, Massachusetts Institute of Technology, September 1976, p. 41.

[23] Op. Cit., The Bond Buyer, "Statistics...", p. 8.

[24] Op. Cit., Leung, pp. 41-42.

most of the available data.[25] One table compiled by the Bond Buyer, State and Municipal Bonds Sold by Purposes, appears below as Table 2.

TABLE 2

STATE AND MUNICIPAL BONDS SOLD BY PURPOSES 1970-1979

(,000 omitted)

	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970
School	$4,924,482	$6,239,540	$ 5,136,350	$ 5,177,240	$ 4,455,535	$ 4,929,513	$4,806,911	$5,348,943	$5,723,009	$4,983,101
Water and Sewer†	3,734,590	4,469,944	4,459,140	3,307,591	2,481,694	2,120,119	2,296,073	2,641,441	3,617,497	2,329,706
Highway, Bridge and Tunnel	935,690	1,876,918	1,350,479	1,552,089	1,095,391	980,813	1,453,415	2,082,257	2,717,903	1,497,392
Gas & Electric #	4,714,457	5,991,730	5,750,819	4,457,356	2,181,455	1,521,757	1,558,337	.....	.....	.....
Hospital	3,517,429	3,138,494	4,734,054	2,725,975	1,959,019	1,292,409	.....	.....	.....	.....
State & Mun. Housing Finance	12,041,244	.....	.....	.....	.....	.....	.....	.....	.....	.....
Industrial	1,339,890	586,076	463,816	356,909	517,801	339,970	269,762	470,695	215,510	47,593
Pollution Control •	2,891,735	3,482,361	3,868,146	2,664,356	2,526,046	2,179,005	2,093,512	.....	.....	.....
Public Housing Authority	.....	.....	.....	.....	.....	.....	460,985	1,029,240	958,950	1,000,435	130,790
Other #	8,161,297	20,429,696	19,297,663	13,603,024	14,129,275	8,999,394	9,445,345	11,238,535	11,091,180	8,773,061
TOTAL	$42,260,817	$46,214,763	$45,060,469	$33,844,556	$29,325,229	$22,823,988	$22,952,040	$22,940,643	$24,369,536	$17,761,645

Figure revised for the year 1975.†
Figures revised for the years 1973-75.#
Includes industrial and non-industrial financing.•
(Statistics compiled by "The Daily Bond Buyer.")

An example of the problems with this data can be illustrated by noting that the volume of industrial bonds as reported in the Bond Buyer table is much less than the amount reported by the Congressional Budget Office, cited earlier. This difference is explained by the large amount of IRBs financed through private negotiations with local banks and other fund sources. These transactions are not recorded by the Bond Buyer, which compiles data only for issues open to competitive bids. Recognizing that these data are downward biased for issues that are frequently negotiated rather than sold through competitive bids,

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[25] Op. Cit., The Bond Buyer, "Statistics...", p. 8.

Table 2 nonetheless provides a summary of the trends in the purposes for which tax exempt bonds are issued.

This chapter has described most of the forms that a municipal bond is likely to take. Two other types that deserve mention are the moral obligation bond and the tax allocation bond. A moral obligation implies that the general revenues of a governmental unit will support the bond issue if such support becomes necessary, but there is no legally binding mechanism to guarantee the support. In New York, for example, the state provided a moral obligation pledge to reinforce the security behind New York State's Urban Development Corporation. The New York fiscal crisis of 1975 shook what little confidence investors might have had in moral obligations, however.

Tax allocation bonds were popular in California prior to the advent of Proposition 13. These issues are used to finance public improvements on specific sites, at which subsequent private development will occur. Any increase in property tax revenue resulting from the ensuing site improvements is pledged toward debt service. Proposition 13 in California dealt these issues a severe blow by limiting the rate of growth in assessments. This type of debt, also called tax increment financing, has been used sporadically in other states, and will be discussed again briefly in Part III.

The next chapter focuses on the demand sector- those investors who support municipal capital expenditures.

CHAPTER IV. THE DEMAND SECTOR- TRENDS IN HOLDERS OF DEBT

To understand the functioning of the municipal bond market and respond appropriately as borrowers, local governments need to consider the composition of the market for tax-exempt issues. Investors in the municipal market are attracted to the tax-free interest on bonds, and the relative security of local government debt instruments. Investors facing a high marginal tax rate are able to realize higher after tax yields from municipal bonds than from taxable securities that have a higher before tax interest rate. For example, an investor facing a 50% marginal tax bracket should be indifferent between a tax-free investment with a 6% yield and a taxable investment with a 12% yield, (assuming comparable quality with regard to risk and payment schedule.) Any increase over 6% on the municipal bond would tilt the investor's preference to the tax-exempt security.

The major investors in the municipal bond market are those with surplus funds who seek a tax-sheltered investment. The most important such investors historically have included commercial banks, fire and casualty insurance companies, and individual investors (i.e. households.) Table 3 shows the dollar amounts and percent distributions of the holdings of these and other investor groups, from 1946 to 1979, for selected years. While the three major investors stand out clearly and consistently as holders of state and local government debt, one can discern changing patterns and trade-offs between the households, commercial banks, and insurance companies.

TABLE 3

HOLDERS OF STATE AND LOCAL GOVERNMENT DEBT
(Selected Years, 1946 to 1979)

BILLIONS OF DOLLARS

Year	1946	1950	1955	1960	1965	1970	1975	1976	1977	1978	1979
Total Debt Outstanding	15.6	24.7	44.8	68.7	100.0	144.4	223.8	239.5	263.2	291.4	312.7
Households	7.2	9.6	18.6	28.7	37.2	46.0	68.1	70.6	73.2	75.0	74.3
Non-Financial Corporate Business	.3	.5	1.2	2.4	3.6	2.2	4.5	3.4	3.5	3.7	4.0
State and Local Governments	2.4	3.6	5.1	7.2	5.0	4.4	6.9	11.1	11.2	12.3	12.2
Commercial Banks	4.4	8.1	12.7	17.6	38.5	70.2	102.9	106.0	115.2	126.2	135.9
Savings and Loan Associations	-	-	-	-	-	.1	1.5	1.2	1.2	1.3	1.2
Mutual Savings Banks	.1	.1	.6	.7	.3	.2	1.5	2.4	2.8	3.3	3.2
Life Insurance Companies	.6	1.2	2.0	3.6	3.5	3.3	4.5	5.6	6.1	6.4	6.4
Other Insurance Companies	.2	1.1	4.2	8.1	11.4	17.0	33.3	38.7	49.4	62.5	74.7
Brokers and Dealers	.3	.4	.3	.4	.5	.9	.6	.9	1.1	.9	1.0

PERCENT OF TOTAL DEBT OUTSTANDING

Year	1946	1950	1955	1960	1965	1970	1975	1976	1977	1978	1979
Households	46.2	38.9	41.5	41.8	37.2	31.9	30.4	29.5	27.8	25.7	23.8
Non-Financial Corporate Business	2.1	2.0	2.7	3.5	3.6	1.5	2.0	1.4	1.3	1.3	1.3
State and Local Governments	15.4	14.6	11.4	10.5	5.0	3.0	3.1	4.6	4.3	4.2	3.9
Commercial Banks	28.2	32.8	28.3	25.6	38.5	48.6	46.0	44.3	43.8	43.4	43.5
Savings and Loans Associations	-	-	-	-	-	.1	.7	.5	.5	.4	.4
Mutual Savings Banks	.6	.4	1.3	1.0	.3	.1	.7	1.0	1.1	1.1	1.0
Life Insurance Companies	3.8	4.9	4.5	5.2	3.5	2.3	2.0	2.3	2.3	2.2	2.0
Other Insurance Companies	1.3	4.5	9.4	11.8	11.4	11.8	14.9	16.2	18.8	21.4	23.9
Brokers and Dealers	1.9	1.6	.7	.6	.5	.6	.3	.4	.4	.3	.3

Sources: 1946-65, Joint Economic Committee, Public Facility Financing, Dec. 1976, Table C3, p.40.
1970-79, Bond Buyers 1979 Municipal Finance Statistics, Vol. 18, 1980, p. 44.
(Origin is Federal Reserve Board Flow of funds accounts data.)

In 1946 the households were the predominant holders with 46.2% of the outstanding debt, but their holdings of municipal bonds did not grow as fast as those of commercial banks or "non-life" insurance companies (fire and casualty). The relative shares held by households and commercial banks reversed between 1946 and 1979, with households decreasing to 24% while the commercial bank share grew to about 44%. Fire and Casualty insurance companies were hardly significant in 1946, but by 1979 this sector exceeded the households' share of securities, with almost 24% of the market. State and local government holdings (which include general funds and retirement funds) have reduced their share from 15% to 4% of the market. The brief increase in state and local holdings in 1976 can be attributed largely to New York government pension funds' purchase of government securities to help in the bail-out of New York City. A brief summary of the economic motivations behind each of these major holders of municipal debt will illuminate these significant trends in the composition of demand for tax-exempt securities.[26]

Commercial Banks

The commercial banks have emerged as the most dominant holder of municipal securities, with almost 50% of outstanding debt. While the major function of commercial banks is to provide loan funds to private sector businesses and individuals, municipal bonds constitute a secure and highly liquid investment alternative when loan demand is weak or whenever there are surplus revenues to be managed. The tax exempt status of municipals is a key factor in attracting commercial bank funds.

[26]Much of the following is derived from Op.Cit. Leung, pp. 83-98.

Municipal bond holdings of commercial banks fluctuate according to loan demand faced by the banks and according to the revenues received by the banks. Immediately following World War II, the banks possessed a large amount of liquid assets with which they purchased municipal securities. In the mid-1950's, however, consumer and business loan demand increased due to the strong growth in the economy at that time. Commercial banks reduced their purchases of municipal bonds in order to free up funds for loans.

New funds became available to commmercial banks in 1961 when they gained the authority to sell certificates of deposit (CDs). Using CD revenue for meeting loan demand, banks were able to invest larger sums in long-term municipal bonds. Reinforcing this movement of commercial banks into municipal bonds was a change that permitted the banks to deduct from their federal taxes the interest costs of borrowing to acquire tax-exempt obligations. These factors can be observed in Table 3 as the increasing percent of municipal debt held by commercial banks from 1965 through 1975.

Hidden within the 5-year spans reported in Table 3, is considerable year-to-year variation in commercial bank activity with regard to the municipal bond market. Commercial banks tap into their portfolio of municipals to meet loan demand, even if such action results in capital losses on their tax-exempt portfolios.[27] In effect, the commercial banks use their tax-exempt holdings as a cushion to absorb the impacts

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[27] Op.Cit., Rabinowitz, p.71.

of changing forces in the banking industry.

One such source of variability to the money markets is Federal Reserve action to control the money supply. Federal Reserve credit policy in 1966 was classified as "active restraint to restraint".[28] As a result of the tightened money market conditions in the summer of 1966, commercial banks shifted investments from their tax-exempt portfolios to take advantage of the increased and highly profitable loan investment opportunities. Not only did banks reduce acquisition of new municipals in 1966, but some banks "dumped large amounts of municipals in the secondary market in order to satisfy business loan demand."[29]

Such action bv the banks frustrates the restrictive efforts of the Federal Reserve Board in controlling the money supply. Another effect is to severely disrupt the tax-exempt market by driving up yields o n municipals and forcing marginal municipal borrowers to back out of the credit market as the cost of credit escalates. The burden of federal restrictive policy is thereby shifted to local governments as well as businesses. In the fall of 1966, the Federal Reserve responded to this crisis in the municipal bond market by issuing a letter instructing member banks to use municipal bond holdings to secure loans from the discount windows instead of contributing to the disorder of the municipal market by dumping securities.[30]

When the commercial banks returned to the municipals market in the

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[28] Op. Cit., The Bond Buyer, "Statistics...", p. 21.

[29] Op. Cit., Rabinowitz, p.70, The author quotes William F. Staats, a Federal Reserve Economist.

[30] Ibid, p.71.

1970s, there was a shift toward short-term notes, including Tax Anticipation Notes (TANs) and Bond Anticipation Notes (BANs). Bad commercial loans and uncertainty created by the New York City problems combined to reduce commercial bank holdings of municipal bonds. Furthermore, participation by larger banks in bank holding companies has provided tax shelters and reduced their demand for tax-exempt securities. In the early 1970s, therefore, the role of the smaller commercial banks (those with less than $100 million of deposits) increased relative to that of the larger banks.

Fire and Casualty Insurance Companies

The fire and casualty insurance companies (F&Cs) are the major institutional investors in municipal bonds. F&C participation has grown steadily from only 1.3% of holdings in 1946 to 23.9% in 1979, about equal to the holdings of households. The F&Cs are more concerned with high return on their investment, and are somewhat less concerned with liquidity, than are commercial banks. F&C holdings, therefore, are more directed toward longer term and lower rated bonds, such as revenue bonds. The involvement of F&Cs in the tax-exempt market diminishes during periods of high inflation and high pay-out of insurance policy premiums. During such times of reduced profits, the importance of tax-exemption is reduced, and higher yield taxable securities are substituted for municipals. These institutional investors are also likely to negotiate investments in municipal projects, because yields are generally higher for negotiated rather than competitive-bid investments.

Households

The household sector, a residual category, is really a catchall for individuals, personal trusts, and other investors not otherwise delineated, according to Federal Reserve flow of funds data. (Because it is a residual category, the data is less precise than in the other investor categories.) The household sector is a significant force in the tax-exempt market with 23.8% of holdings in 1979. This figure represents a declining importance since 1946, however, when the household sector accounted for 46.2% of holdings. This sector includes wealthy individuals seeking tax sheltered investments of low risk, personal trusts managed by professional advisors on bank trust departments, and municipal bond funds. The bond funds are mutual investment funds in which less wealthy individuals pool their funds to purchase a portfolio of tax-exempt investments.

Starting in 1961, these funds have grown quickly in number and in the volume of tax-exempt purchases. Municipal bond funds accounted for the greatest percentage increase in household participation and were expected to "increase to become the market's major purchaser"[31] when data from 1976 were examined. Characteristically, these funds seek high quality, long-term, revenue obligations, with an A rating or higher.

While recent data on municipal bond funds are scarce, there has been a shift away from funds as described above. According to Dave Maynard (Vice President, Public Funds Management, Fidelity Group),

[31] Op. Cit., Leung, p. 93.

"the long-term (municipal bond) funds were decimated" in 1978 and 1979. Predictions made in the mid-1970s, while cognizant of the 1974-75 jump in tax-exempt yields, did not anticipate the unprecedented high yields that have occurred in 1980 and 1981. Since the bond funds offer complete liquidity to investors, when the yields increased in 1978 and 1979, investors naturally withdrew from the lagging mutual fund in favor of better returns available elsewhere in the market.

Since January of 1980, however, municipal bond funds have returned with short-term, tax-exempt money market funds. These short-term funds are better able to track the rising yields because of the quick turnover in securities. Thus the bond funds have shifted their demand, and presumably much of the household sector investment, into BANs and TANs much as the commercial banks have done.

While not exhaustive, the above description of demand and supply components of the national municipal bond market provides a context for examining the current situation in Massachusetts under Proposition 2-1/2. Before turning to Massachusetts, however, it is useful to look at trends in tax-exempt yields, in comparison with historical trends. The yields are the result of market interaction between the supply and demand sectors (municipal borrowers and investors). The market also responds to such external forces as federal government monetary policy and inflation. These factors are the subject of Chapter V.

CHAPTER V. RECENT TRENDS IN MUNICIPAL BOND YIELDS

One way to examine the cost of municipal borrowing for capital improvements is to chart the trend of municipal bond yields over time. The "Trend of the Bond Market" chart (Chart 2) shows the Bond Buyer Index of 20 municipals* (in bold black line) from 1959 to 1979, along with the after tax yields on long-term federal securities and corporate bonds. This chart shows price trends for the bonds as reflected in average yield for the 20 component municipals. Since falling prices are reflected by increased yields, a rise in yields is seen as a dip on the graph. While a lower price paid for a municipal bond increases the yield to the investor, the borrower experiences increased cost for capital.

Chart 2 shows that bond prices have been erratic during the latter part of this 20 year period. Bond prices fell 1969 to 1970, and fell again between 1974 and 1976, resulting in historically unprecedented yield swings, peaking at 7.12% in 1970, and at 7.67% in 1975. In 1979 a third price trough is evident, with a high yield of 7.38%.[32] The municipal yield index shows greater volatility than either the corporate or the federal indices.

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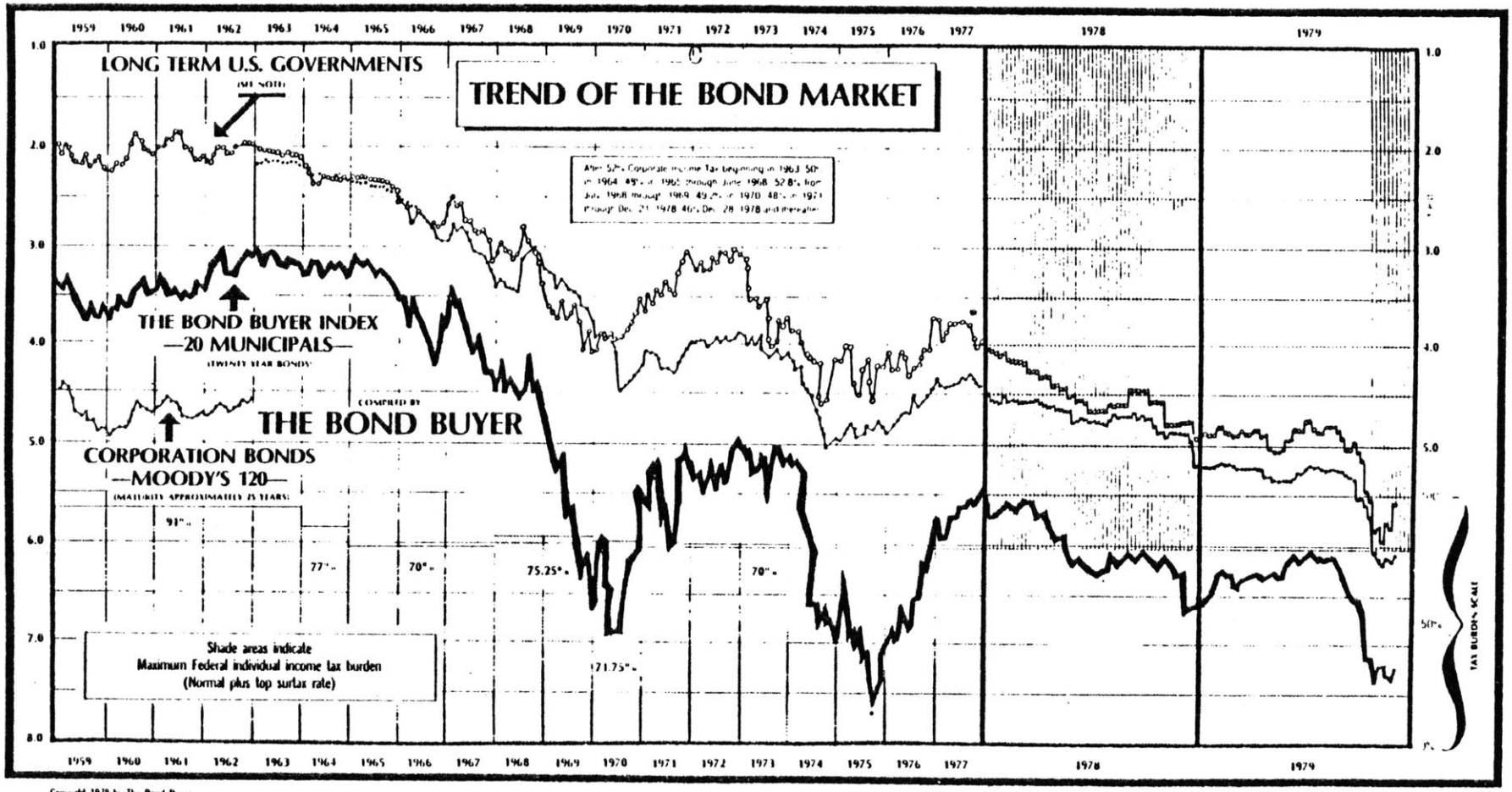
* The Bond Buyer 20 Bond Index is the average yield of 20 bonds of 20 year maturity with varying ratings. The average rating of the 20 bonds used in this index falls midway between the top four Moody's ratings.

[32] Op.Cit., The Bond Buyer, "Statistics...", p.24.

CHART 2



*All Time High -7.61%

NOTE: Long-term U.S. Governments-The line for Government bonds in this graph from Jan. 4, 1979 to date is based on yields of 8¾s of 11/15/2008, after 46% corporate income tax, as shown in our weekly compilation "The Bond Buyer's Index of Municipal Bond Average Yields." From March 28, 1974 through Dec. 28, 1978 yields of 7s of 5/15/98, after 48% corporate income tax, on Dec. 28, 1978 after 46% corporate income tax, was used. From Feb. 15, 1973 through March 21, 1974 yield of 6¾s of 2/15/93 was used. From Jan. 1959 through Feb. 8, 1973 yield of 3½s of 2/15/90 was used. Corporate Bonds-Beginning in 1963, the yield shown for corporate bonds is after corporate income tax shown above. From 1959 through 1962 yields shown are before corporate income tax.

One reason for this difference between the volatility of taxable versus tax-exempt securities has to do with the tax treatment of capital gains. While interest earned on municipal bonds is exempt from federal income taxes, this exemption is valid only for the "interest at issue." If a municipal bond is purchased at discount in the secondary market (i.e. purchased at a lower price, thereby producing a higher yield than the contract yield at the time of issuance), then the ultimate income produced over and above the interest at issue amount is taxable at capital gains rates. If the same thing occurs with a taxable security, the capital gains portion of the ultimate income is taxed at a lower rate than the interest at issue, because a capital gain is taxed at 50% of its value. This distinction in tax treatment helps explain a portion of the tax-exempt volatility, through the relatively differing advantages to capital gains as a share of income from tax-exempt versus taxable securities. There are more fundamental causes of the market turbulence of the seventies, however, that warrant discussion.

Earlier chapters of this section discussed the trends in supply and demand components of the municipal bond market. State and local government borrowing has increased in volume and in scope. Debt limits have been bypassed through lease-rental debt issues, and the constraints on legitimate public purpose for tax-exempt status have been largely removed. Pollution control bonds, hospitals and health center bonds, housing and mortgage insurance bonds, industrial revenue bonds, and other relatively new uses of tax-exempts have deluged the tax-exempt market, in conjunction with traditional infrastructure uses of municipal bonds. The demand sector has grown and kept pace with the overall

economy, with some shifting of roles among investor groups; there has been, however, no corresponding growth in demand for tax exempts to accommodate the supply volume generated by these new uses. Indeed, there has been some shrinking of the demand sector as large commercial banks have discovered lucrative new tax-shelter mechanisms.

Structural changes occurred within the municipal bond market, but the growing market continued to function smoothly until 1970, when a credit crunch condition caused a significant dip in tax-exempt sales.[33] Sales recovered by 1971, as is reflected in the price increases in Chart 2, until 1974, which was the start of a downturn in the United States. Forbes and Petersen, (in the Twentieth Century Fund's Building a Broader Market) explain how the recession of 1974-1975 created the severe dip in municipal bond prices seen in Chart 2, as follows:

> "The summer of 1975 brought the curtain down dramatically on a remarkable era of growth, change, and innovation in the municipal bond market...The steady upward surge (in the volume of state and local borrowing) was slowed by periodic credit crunches of 1966 and 1969, when a scarcity of capital and high interest rates particularly affected the market for municipal securities. But tax-exempt sales recovered and made up for lost ground. Then, in 1975, recession compounded the problems of inflation. In 1974-75, interest rates on municipal long-term bonds and short-term notes matched or exceeded the record high levels of 1970...As the economic troubles of 1974 deepened, a number of shaky situations began coming apart- particularly in the older metropolitan areas that had long been in difficulty...The stage was set for debacle- and it happened in New York...In July (1975), in a last-ditch effort to contain the New York City credit crisis, the Municipal Assistance Corporation (MAC) began an attempt to sell $3 billion in bonds in three months. Only the federal government had ever attempted such a feat... But the scheme failed, and the municipal bond market continues to feel the shock waves of that event."[34]

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[33] Twentieth Century Task Force on the Municipal Bond Market, Building a Broader Market, Background Paper by Ronald W. Forbes and John E. Petersen, New York, 1976.

[34] Ibid., pp. 31-32.

The "shock waves" Petersen and Forbes referred to in 1976 are still reverberating today, in mid-1981. Some of the unhealthy symptoms of today's municipal bond market include wide disparities in the cost of capital for different categories of issuers, creating a "tiered" selling market; other distressed older cities following New York City into default conditions, with Boston now perilously close to adding its name to the list; and finally, very little respite from the low prices being demanded by investors, with record high yields being recorded this year.

Tiering of the market occurs because investors have lost a measure of the faith in the security of municipal bonds. This confidence was the product of over 30 years of very few default incidents since the Great Depression. The New York experience showed investors that neither the state nor federal government is sure to come to the aid of a city faced with default conditions. The rate disparity between lower rated investment grade securities (Baa) and the highest grade (Aaa) has widened. By 1975 the spread in yields between low and high rated bonds had reached a full percentage point,[35] which was considered unusual before 1970.

The weak investor demand for municipals, coupled with the extra measure of caution and concern about the fiscal solvency of local governments, has resulted in segmentation of issuers into four tiers.[36] Leung, in his thesis on Factors Influencing Municipal Bond Participation,

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[35] Ibid, p. 33.

[36] Op. Cit., Leung, p. 102.

has ranked these tiers from the most insulated issuers, least affected by market disruption, to the most vulnerable issuers who have the most difficulty finding a market for their debt.

Tier one consists of small, wealthy communities with a strong fiscal base. Much of the debt issued by these cities and towns is absorbed locally by civic-minded business and banking interests. The turbulence of the national market has little affect on these communities. Tier two is made up of larger cities with a national reputation for fiscal stability. These cities have a "name issue preference" advantage when competing in the national market for investors' attention. These top two tiers are generally able to market their bonds with little trouble and at relatively high prices.

The third tier is comprised of smaller communities who have not yet established their credit-worthiness in the market. These issuers are unknown by the investors, and often are unskilled at negotiating the path of credit issuance, perhaps entering the market with no bond rating from the rating agencies. These communities have trouble marketing their bonds, especially if they are relatively small issues, and will generally have to pay high yields. Maine and Vermont have relatively many such communities, so have therefore established bond banks, which consolidate many small, unmarketable issues, into a larger package secured by a reserve fund. This system has improved the position of those tier three issuers, and will be further discussed in part three in relation to Massachusetts' problems.

The fourth tier, hardest hit by the volatility in the market, are "problem borrowers", larger and older cities including New York and

Boston. Others include Philadelphia, Jersey City, Cleveland, Detroit, and Baltimore. These cities all have a reputation that stigmatizes them in the bond market. Leung describes their plight as follows:

> "These large urban cities and agencies are generally concentrated in the Northeast. Faced with older infrastructures and increasing costs, a negative name issuer preference has developed. Issuers in this group are able to market their debt only through negotiated sales or seeking funds from unsanctioned sources such as state and local government funds or by persuading banks and large financial institutions into buying bonds in the interest of public spiritedness...The funds secured, however, are not without high costs. Record yields, some one or two percentage points above the median; and price discounting to 75% of par have been reported within this group of borrowers."[37]

The Importance of Bond Ratings

It is appropriate to think about the tiered market when considering how cities and towns in Massachusetts will fare in the bond market. To some extent this tier system is reflected formally in the market through bond ratings.

When a community sets out to market a bond issue, it will generally contact Moody's Investor Service and/or Standard & Poor's (S&P) and arrange to have an up-to-date rating for the new issue. The agency charges a fee for this analysis, and requests detailed information on the fiscal and socio-economic status of the community, on which the agency bases its judgement as to the security behind the bond issue and assigns the rating. The rating is an index of the quality and risk attributes of the issue. A description of Moody's ratings follows.[38]

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[37] Ibid, p. 103.

[38] First National Bank of Boston, "Guide to Municipal Bond Ratings", 3rd Edition, Boston, Massachusetts, Appendix 2.

Standard & Poor's ratings are comparable, and the equivalent rating symbol for S&P is shown in parentheses.

Aaa (AAA)- These bonds are judged to be the best quality. They carry the smallest degree of risk and are generally referred to as "gilt-edge". Interest payments are protected by a large or an exceptionally stable margin and principal is secure. Any changes in the various protective elements are unlikely to impair the strong position of such issues.

Aa (AA)- These bonds are judged to be high quality by all standards. Together with the Aaa group, they comprise the "high-grade" bonds, but Aa bonds appear to have somewhat greater long-term risks than Aaa bonds.

A (A)- A-rated bonds possess many favorable investment attributes and are considered 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 (BBB)- Considered as medium grade obligations; i.e. 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 unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well.

These four grades comprise the "investment grade" security ratings. Lesser ratings (Ba, B, Caa, Ca, C) are assigned to speculative securities, and many investors are either legally precluded from investing in such issues (such as commercial banks) or simply choose not to (households). Very few issues are rated below Baa, since there is little advantage to a bond with a speculative rating over an unrated bond; both are considered risky by investors.

Several studies have looked at the relationship between bond ratings and borrower interest costs, especially at the spread between interest costs for low or high rated issues.[39] While the spread between Aaa and Baa rated 20 year bonds has fluctuated between 40 and 105 basis points, it is apparent that bonds of different quality perform differently over the interest rate cycle as well. Lower grade bonds experience greater price volatility and are therefore a greater market risk. An example of this variation from the 1960's showed than an 83 basis point shift in the yield of a 20 year Aaa bond corresponded to a 100 point change in a similar Aa bond, and a 126 basis point shift in a Baa bond.[40]

Most Recent Yield Data

A more detailed look at bond ratings in Massachusetts cities and towns, and the determinants of bond ratings, will follow in Part II. Before turning to the next part dealing with Massachusetts and Proposition 2-1/2, however, I will conclude this chapter with a look at the

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[39] Twentieth Century Fund Task Force on Municipal Bond Credit Ratings, The Rating Game, Background paper by John E. Petersen, New York, 1974, p. 45. Separate studies by Phelps, Kessel, and Petersen are cited.

[40] Ibid, (citing the Phelps study.)

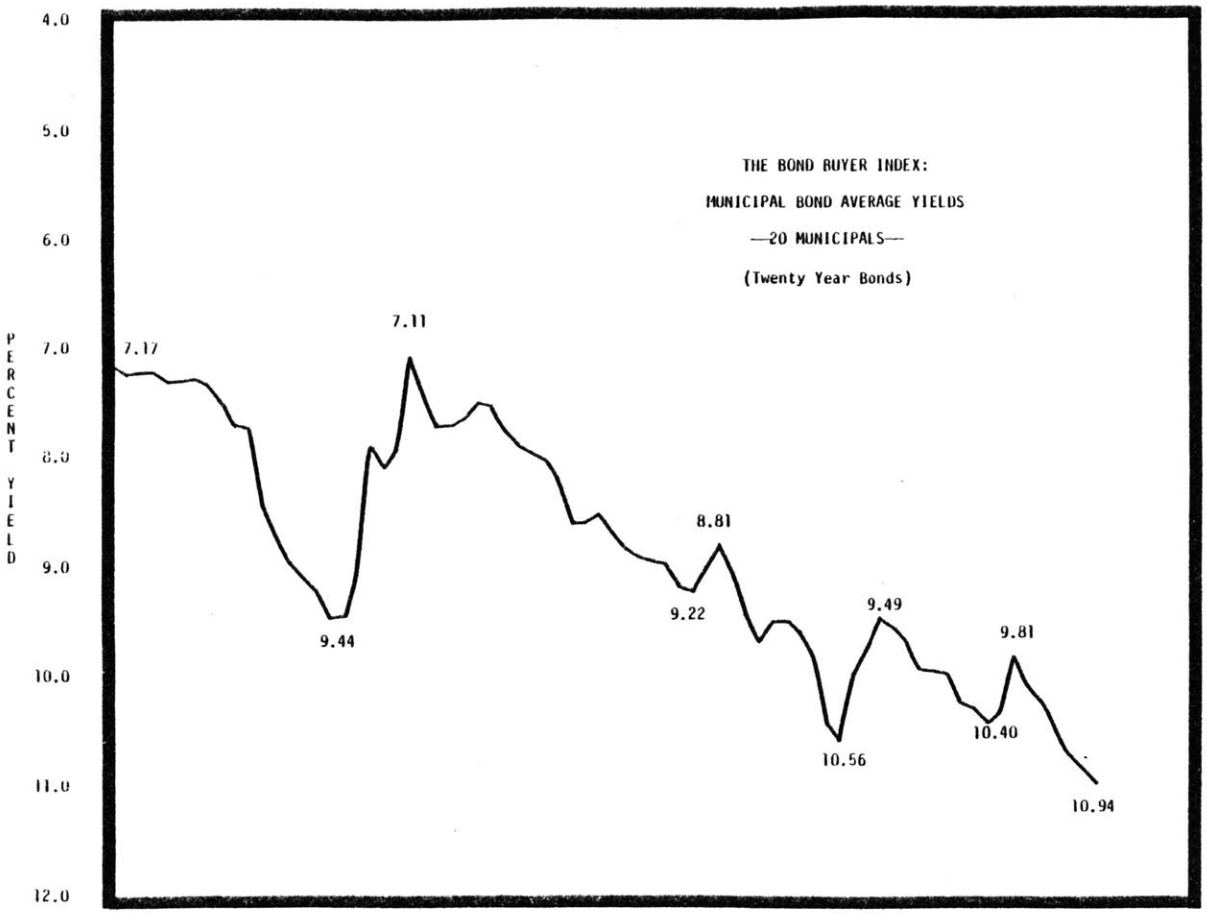
Bond Buyer 20 index movements after 1979, through April, 1981. Chart 3 presents data that were culled from recent issues of the Weekly Bond Buyer. The reader might want to refer back to Chart 2 to recall the trends through 1979, when the index was shown to be sinking to levels nearly as low as were experienced in 1975.

Chart 3 picks up where Chart 2 left off, and the graph shows that prices have fallen in the past 18 months to unprecedented low levels. Record yields were experienced on April 3, 1980 at 9.44%, falling to a low yield of 7.11% by May 8, only to rise again as prices plummeted almost continually reaching new lows on December 18, 1980 at 10.56% yield, rising briefly, and falling again as the Federal Reserve tightened up on credit by raising the discount rate in April. The most recent data as this is written shows that on April 30, 1981, the Bond Buyer 20 Bond Index had an average weekly yield of 10.94%.

Such a yield on tax exempt 20 year instruments, with an average rating between Aa and A, is a reflection of the very unsettled bond market. At these prices, the cost of capital to state and local governments is almost prohibitive. Capital improvements plans are being shelved and expenditures postponed in the hopes that the market will stabilize at lower interest rates. Most new issues are currently taking the form of bond anticipation notes if borrowing cannot be deferred.

John H. Allan, a columnist for the weekly Bond Buyer, reported that the late April surge in long-term bond yields took many bankers and borrowers by surprise. Most analysts had predicted a reduction in short-term interest rates and a leveling of bond yields this spring. These expectations of favorable market conditions were based on assumptions

CHART 3



Source: "The Weekly Bond Buyer", (various issues.)

of a slack economy. As it happened, the economy was quite strong, and the Federal Reserve Board became concerned about the unhampered increase in the money supply, and therefore decided to let interest rates increase.

In reevalutating current economic conditions to formulate a new prognosis for the municipal credit market, Allan cites recent progress toward bringing the inflation rate down to single digit indexes. Given the robust economy, however, investors are not confident that the lower inflation rates can be sustained in the long-term. Reagan's economic policy, moreover, is described by Allan as follows:

> "...the Reagan program is a stimulative package of tax cuts and increased defense spending combined with a restrictive monetary policy. If that is not a formula designed to drive interest rates still higher, it is hard to think of a set of proposals that would do it better."[41]

Allan elaborated on the economic forces currently affecting the credit market by citing five key "realities" that were listed by money market economists, William N. Griggs and Leonard J. Santow. The first reality cited is the relatively robust economy that does not appear to be headed into a recession in the near future. The second point is the probability that inflation will remain high in the near future. Third is that Reagan will succeed in enacting his stimulative fiscal package, and fourth is the Federal Reserve Board's policy to restrain growth in the money supply by slowing the growth in bank reserves.

The fifth reality identified by the money market economists concerns the scheduled federal government sale of $16 billion in notes, which

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[41] Weekly Bond Buyer, May 4, 1981, Vol. 223, No. 4594, New York, N.Y., "The Credit Markets" by John H. Allan, p. 1, and back page.

must be absorbed by the market. Adding up these five realities, Allan arrives at the following conclusion:

> "For the moment, there appears to be little chance that borrowing costs- for the U.S. Treasury, for corporations or for states and cities- are likely to decline significantly at any time soon."[42]

Chart 3 shows dramatically what the current market condition looks like for municipal borrowers. It is against this contextual backdrop that we now turn to focus attention on the plight of Massachusetts cities and towns that have recently been hit with Proposition 2-1/2. Part II deals with the interaction between these national conditions, the circumstances of municipalities in the Commonwealth, and the new rules dictated by the provisions of Propostion 2-1/2.

[42] Ibid.

PART II.

LINKAGES BETWEEN PROPOSITION 2-1/2 AND THE MUNICIPAL BOND MARKET

CHAPTER VI. PROPOSITION 2-1/2 AND THE MUNICIPAL BOND MARKET

This chapter introduces the major provisions of Proposition 2-1/2 and identifies three linkages that connect this initiative to the municipal bond market. These linkages include: 1) the "credibility gap" which has shaken investor confidence in the Commonwealth's commitment to abide by a pre-existing contractual agreement; 2) the loss of the ability to issue general obligation bonds secured by the full faith and credit of an unlimited taxing power; and 3) the potential for severe transitional fiscal stress which will likely be reflected in bond ratings, and which might jeopardize debt service payments for existing debt. The third linkage is the subject of Chapter VII.

Proposition 2-1/2

Proposition 2-1/2 places limits on both state and local revenue-raising capacity, with most emphasis on the local restrictions. The cornerstone of this bill is the limitation of the local property taxation to 2-1/2 percent of full and fair market value. Cities and towns with higher tax rates must reduce their total tax levy by 15 percent per year until the 2-1/2 percent target tax rate is realized. No city or town, whether at or below the 2-1/2 percent tax rate, can increase its total tax levy by more than 2-1/2 percent per year, regardless of the inflation rate or any subsequent new construction adding to the taxable property base.

Because additional property investments cannot be fully tapped as a source of increased revenues, (above the 2-1/2 percent total levy

increase limit), Proposition 2-1/2 has been labeled a "no-growth" bill. Land development proposals that would previously have yielded a fiscal surplus, (i.e. the increment in tax revenues generated by the project exceed the increment in service costs incurred), may well lose that fiscal advantage because of Proposition 2-1/2. This local disincentive to accept development is very unpopular in the state, which is currently trying to encourage economic development through the "make it in Massachusetts" campaign.

Another local revenue source, the auto excise tax, was reduced by 61 percent, from $66 to $25 per thousand dollars valuation. Section 12 of the Act specifies that cost assessments by county, district, or public authority are limited to no more than four percent increase per year, and that user fees cannot exceed the costs of providing the goods or services.

In addition to limiting local revenues, the 2-1/2 initiative includes provisions designed to help local governments cut costs. These provisions include repeal of the fiscal autonomy of school committees, and repeal of compulsory and binding arbitration for public employees. Section five gives to local governments the authority to revoke any optional provision of the General Laws that has been accepted, if three years have elapsed since acceptance of the optional provision.

At the state level, Proposition 2-1/2 forbids future unfunded mandates to local governments and forbids expansion of property tax exemptions mandated by the state unless the state reimburses the locality for such exemptions. State tax revenues will be reduced because of the provisions

of the bill that allow renters to deduct one-half of annual rent from state income taxes.

The effects of the provisions of the bill will be felt at different times by the various levels of government. For example, the loss of auto excise taxes was the first effect that was felt severely by local governments. The timing of this loss in revenues, which amounted to $225 million statewide in fiscal 1981,[43] was particularly painful locally. Since the fiscal year in Massachusetts communities extends from July through June, the 1981 budgets were set with an estimate of auto excise tax revenues based on the $66 per thousand rate. With passage of Proposition 2-1/2 in November, and auto excise taxes (which are collected in the spring) still outstanding for the fiscal year, the excise tax reduction to $25 per thousand affected the fiscal 1981 budget. Thus each city and town in the Commonwealth suffered an unanticipated revenue shortfall this year.

Proposition 2-1/2 is largely a revolt against high taxes, similar in many ways to Proposition 13 in California. In California, housing inflation was extreme; property values and assessments were rising at a fast pace. Property owners felt that the tax burdens were too severe, and given the opportunity to vote on a tax-limiting constitutional amendment, their response was two to one in favor of limiting taxes on real property.

The problem in Massachusetts concerns residents' perceptions of a high tax burden. Bill Wheaton has shown that although the 1977 Massachusetts property tax bill per capita of $486 was higher than that of

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[43]Boston Globe, March 7, 1981, p. 1.

any other state, total local revenue per capita is similar to or lower than that in other industrial states.[44] By 1978-79, the per capita property tax bill was reported to be nearly $546,[45] second only to Alaska. Wheaton's data show that although the per capita property tax levy increased from 1977 to 1980, it did not increase as fast as inflation. Therefore, the property tax levy actually declined in real terms over this period. The voters, however, were not satisfied with this reduction and approved, (60 percent to 40 percent) the Proposition 2-1/2 tax limit initiative in November 1980.

A number of researchers are analyzing why voters supported Proposition 2-1/2 to the extent that they did.* While the motivating forces are more complex than will be discussed here, a review of recent political trends in Massachusetts would suggest that a frustrated desire for tax relief has been growing for several years. The most salient feature of Massachusetts' tax structure has been the high reliance on property tax as a source of local revenue, at 84 percent of all local revenue compared to the national average of 53 percent.[46]

Former Governor Michael Dukakis included a pledge to cut taxes in his campaign- a pledge that he failed to keep. In the campaign for re-election, his opponent, Edward J. King, continually reminded voters of Dukakis' broken tax cut promise. King proposed to reduce taxes by $500 million, and on this platform he was elected governor over Dukakis.

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[44] Wheaton, William C., "Proposition 2-1/2: The Prospects", October 25,1980, D.U.S.P., MIT, p.2.

[45] Moody's Bond Survey, March 9, 1981, (U.S. Census Bureau Data).

* e.g. Helen F. Ladd and Julie B. Wilson, Harvard; and Karl E. Kim, MIT.

[46] Ibid.

King also discovered that a $500 million tax reduction was politically unfeasible. Instead, he substituted the tax-cap legislation. (Chapter 151 of the Acts of 1979), as his major tax cut proposal.

One of the provisions of the 4 percent tax-cap bill required local governments to fully appropriate any past accumulated surpluses. Localities that have complied with this law therefore have no local surplus with which to cushion the blows from Proposition 2-1/2. Nor was there any significant state surplus as was the case in California. Further revenue reductions will emanate from the federal government, not only because of President Reagan's budget cuts, but also in the delayed reaction of the Federal Revenue Sharing grants to the local tax reductions induced by the 1979 tax-cap law. The revenue sharing formula includes a term for local tax effort. A reduction in local tax effort will result in a reduction in revenue sharing funds after a two year lag.[47] Thus, revenue sharing funds to Massachusetts cities will be on the decline for the next several years, even without changes in the federal progam guidelines.

Proposition 2-1/2, combined with the 1979 tax cap, impinges in several ways upon the creditworthiness of Massachusetts' local governments. The credibility gap issue and the loss of unlimited local taxing power are the direct or definitional effects of Proposition 2-1/2. These changes will create a problem for all localities in Massachusetts, by altering the "terms of trade" in the municipal bond market. The

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[47] Boston Globe, "Crisis" (Special report on cities and towns following Proposition 2-1/2), May 11, 1981, p. 23.

following chapter will deal with the fiscal stress that might be created or aggravated by the revenue cuts; the extent of disruption to fiscal stability varies according to the local condition.

The Credibility Gap

Proposition 2-1/2 is perhaps the most stringent tax limiting legislation that has been enacted in the United States to date. The language of the bill is strict and unyielding, exempting no portion of the local budget from its provisions. Furthermore, the initiative prohibits local override until fall of 1982, thus ensuring that every Massachusetts city and town will get a taste of the tax limit medicine that has been prescribed for the state. On the other hand, Proposition 2-1/2 takes the form of a statutory proposal rather than a constitutional amendment, a distinction which allows the State Legislature to amend or eliminate the proposition.

Proposition 13 in California is a constitutional amendment which is much more difficult to alter than is Proposition 2-1/2. The California bill is somewhat less restrictive, however, in that taxes can be increased as necessary to meet the principal and interest payments on all existing voter-approved debt. The specific exemption reads as follows:

> "The limitation...shall not apply to ad valorem taxes or special assessments to pay interest and redemption charges on any indebtedness approved by the voters prior to the time this section becomes effective."[48]

Proposition 13 was passed on the state primary ballot of June 6, 1978,

[48]Beebe, Jack H., "Proposition 13 and the Cost of California Debt," National Tax Journal, Vol. 32, No. 2 Supplement, June 1979, p. 244.

and became effective July 1, 1978.

Proposition 2-1/2 has no such exemption for taxes allocated to debt service for existing local obligations. As has already been mentioned, this limit on taxing power is inconsistent with local pledges of unlimited taxing power to secure debt service payments on existing long-term debt. To pledge the full faith and credit of a local government's unlimited taxing power means that the community has obligated its general revenue fund toward repayment of the debt. General obligation bond issues must be approved by the voters who will ultimately have to pay the debt service through tax payments. Despite their explicit approval of these debt burdens at the local level, however, the voters revoked their acceptance of tax supported local debt financing when they voted for Proposition 2-1/2.

In a single stroke, Proposition 2-1/2 abrogated the pledge behind every local general obligation bond outstanding in the state; no longer can localities raise taxes as necessary to meet debt service requirements on general obligation bonds. From the investors' viewpoint, this breach of faith has at least two implications. First, the holders of pre-2-1/2 Massachusetts general obligation bonds will have difficulty selling these bonds in the secondary market. Although secondary market data are not available to verify or quantify this assertion, it is virtually certain that the prices obtainable for these securities will be significantly lower due to reduced investor demand because of Proposition 2-1/2. The tax limit results in a higher risk of default on payments for outstanding bonds. This problem exists for new bond issues as well,

and will be discussed further below.

The second implication of Proposition 2-1/2 concerns the perceptions of the investor community about the reliability of Massachusetts cities and towns. Reliability in this context refers to the degree to which the local governments are consistent, predictable, and trustworthy in relations with investors and underwriters. Proposition 2-1/2 has compromised these qualities, thereby reducing investor confidence in the reliability of all of the communities in the state. Two representatives of the investor sector who have commented on this aspect of the tax limit law are Howard Mischel of Moody's Investors Service, Inc. and Ruth W. Corson, of E.F. Hutton and Company, Inc.

Mischel, in a speech before the Massachusetts Collectors and Treasurers' Association, emphasized that Proposition 2-1/2 precludes future issuance of unlimited ad valorem tax debt. In addition, Mischel asserted:

> "It also appears that the unlimited tax pledge afforded general obligation debt issued prior to passage of Proposition 2-1/2 is effected; this point has not been clarified by the courts or the legislature. Obviously, this is a subject of great concern to us and all other credit analysts; implicitly ...a form of pledge made to a bond holder appears to have been broken."[49]

Corson characterized the loss of unlimited taxing power to secure pre-November 1980 debt as a situation leading to a "credibility gap" between investors and Massachusetts local bond issuers. She claimed that all Massachusetts bonds will be tainted because of the voters' collective disregard for earlier local financial commitments. Corson

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[49]Mischel, Howard, Assistant Vice President, Municipal Bond Research Department, Moody's Investors Service, Inc., Speaking at the May 13, 1981 meeting of the Massachusetts Collectors' and Treasurers' Association.

also raised the legal issue as to whether this portion of Proposition 2-1/2 is constitutionally correct.

> "Of principal concern is the status of debt security, as Proposition 2-1/2 makes no provision to exclude debt service on existing debt for the limit. While the U.S. Constitution prohibits passage of any law which would impair existing contractual obligations, it appears that a default might be necessary to institute court proceeding with the process of litigation a time-consuming and possibly disruptive occurrence. It is not clear, in fact, whether a plaintiff would find redress under the contractual protections of the Federal Constitution."[50]

There remains uncertainty about the legal status of pre-existing general obligation bonds vis-a-vis the limits on local taxing power. The investor community, however, is disturbed that unilateral action by the state has impaired the quality and therefore the value of outstanding general obligation debt. The "taint" on Massachusetts results more from the principle of the action than from the ultimate legal status which will eventually be determined by the courts in the event of a default. The Commonwealth has shown bad faith toward the investor community through passage of Proposition 2-1/2 as it presently stands.

Given that Proposition 2-1/2 has been enacted, however, the legal status of pre-existing debt is of significant concern. This concern prompted Boston Treasurer, Lowell L. Richard, 3rd, to inquire about these legal ramifications of Proposition 2-1/2. The law firm of Palmer & Dodge concluded that any application of the tax limit law that inhibits payments of principal or interest to holders of previously issued bonds would be unconstitutional. The statute itself is not unconstitutional, according

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[50] Corson, Ruth W., Vice President of E.F. Hutton, specializing in municipal bond research, "Perspective: Tax Reform- Massachusetts Style" report and presentation at the Mass. Municipal Association 6th Annual Legislative Conference, Boston, MA, March 7, 1981.

to the firm. They maintain, however, that:

> "...any application thereof resulting in the impairment of the obligations of Massachusetts cities and towns to the holders of bonds issued prior to November 4, 1980, including the obligation to raise by taxation without limit revenues sufficient to pay principal and interest coming due on such bonds to the extent not paid from other funds, would be unconstitutional."[51]

Palmer & Dodge's opinion regarding the constitutionality of the initiative law as a whole has since been affirmed by the Suffolk Superior Court (April 1, 1981),[52] and later reconsidered by the Massachusetts Supreme Judicial Court (May 5, 1981).[53] While there may be flaws in the wording or problems in some provisions of the act, (e.g. one controversy centered around the vagueness and brevity of the summary statement of the initiative petition), such defects are weighed against the overall substantive provisions of the law, which are constitutional.

One might wonder whether those who drafted the tax limit initiative actually intended for the credibility gap to occur. In California, for example, Howard Jarvis, (co-author of Proposition 13), indicated that he hoped that redevelopment authorities that had issued non-voter-approved debt would win a court suit overturning that portion of the tax limit amendment which jeopardized their capacity to service their debt. Jarvis admitted that he "never even gave a thought to" protecting those issuers and holders of debt when he drafted the initiative.[54]

Similarly, in Massachusetts, there have been indications that Citi-

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[52]Harvey, Joseph M., "Proposition 2-1/2 Wins Major Court Test", Boston Globe, April 2, 1981, pp. 1, 20.

[53]Harvey, Joseph M., "SJC Studies Question of Prop. 2-1/2 Legality," Boston Globe, May 5, 1981, p. 32.

[54]Op. Cit., Jack H. Beebe, p. 244.

zens for Limited Taxation, the sponsors of Proposition 2-1/2, are feeling some regret over the likely consequences of the initiative's so-called "no-growth" provision.[54a] The full impact on development projects of that provision (explained earlier) may not have been anticipated by the sponsors and voters for the bill. It is unlikely,however, that the lack of an exclusion providing for tax increases to service pre-existing debt was the result of unsophisticated drafting of Proposition 2-1/2. Proposition 13, the national model for tax limit referenda, had such an exclusion. It seems likely that the 2-1/2 initiative was drafted purposefully as an uncompromising tax relief measure. Any "exclusions, add-ons, or avoidances" have been left for the state legislature to dole out, if it dares. Some of the corrective measures under consideration by the legislature will be discussed in Part III, along with the political issues that are involved.

Bonds Secured by a Limited Taxing Power

At this writing, there has been only one local government long-term general obligation bond issue in Massachusetts since passage of Proposition 2-1/2. On March 18, 1981, Concord received five bids on its $1.56 million, 9-year bond offering, which was bought by two Boston brokerage houses who together submitted a winning bid of 7.3 percent interest for the bonds.[55]

Most observers of the Massachusetts municipal bond market paid close

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[54a] Fitzgerald, Joan, "Some 2-1/2 Backers Thinking it all over," Boston Globe, February 23, 1981. pp. 21, 24.

[55] Lowery, Donald, "Concord Issue Sells at 7.3%," The Boston Globe, March 19, 1981.

attention to the Concord bond sale as a barometer of the changes in the municipal bond market brought on by Proposition 2-1/2. A number of features, however, combined to make the Concord issue very attractive to investors, despite the limited taxing power pledged as debt security. First, Concord is not severely affected by Proposition 2-1/2, needing to make only a few budget cuts that will not severely affect service levels.[56] Moody's rated the issue as Aa, which is the same rating as was assigned to Concord's most recent pre-Proposition 2-1/2 bond issue.[57]

The timing of the Concord issue appears to have been very strategic in securing the financing at this very reasonable interest rate. Concord Treasurer, Anthony T. Logalbo, chose to float the bond issue even though the town's bond anticipation notes could have been renewed instead. Logalbo was aware that Moody's was at that time re-evaluating the bond ratings of Massachusetts cities and towns, but that no pronouncements had yet been made by the investment analysts. It was only nine days later that Moody's suspended bond ratings for 37 municipalities because of the jeopardy and uncertainty created by Proposition 2-1/2. The suspension dramatized for the investment community the impending difficulties that will be faced by Massachusetts communities in complying with the new limits. Concord managed to avoid this bad publicity by announcing its issue early.

Other factors that stimulated bids on the Concord issue included

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[56]Lowery, Donald, "Concord Bond Sale is Today, " The Boston Globe, March 18, 1981.

[57]Ibid.

the shortage of other issues in the state since passage of Proposition 2-1/2, as well as the "name-issue preference" of investors for the Town of Concord. One of the two Boston brokerage houses that underwrote the Concord issue reported that the company managed to sell about 85 percent of the $1.59 million issue within one hour of the purchase. By the end of the day, only 7 percent, or $105,000, remained to be sold.[58] Les Gross, Vice President of Burgess & Leith, summarized the factors of success as follows:

> "This being the first issue since the passage of Proposition 2-1/2, there was quite a bit of pent-up demand. That, combined with the name of Concord, led to the success."[59]

While it is generally true that the wealthier towns will retain an attractive position in the bond market, the limit on taxing power will somewhat hurt their competitive position, all other things being equal. Every bond issue must have a written certification by a respected bond counsel that comments on the validity of repayment claims and the security behind the debt, the legality of the issue with regard to enabling legislation, debt limits, etc., and any other relevant information. If the debt is secured by a locality's unlimited taxing power, this fact will be included in the legal opinion. Concord was the first Massachusetts town to issue a limited tax bond. The legal opinion for this issue, written by bond counsels from the firm, Palmer & Dodge, reads as follows:

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[58]Op. Cit., Donald Lowery, "Concord Issue Sells at 7.3%".

[59]Ibid.

> "The bonds are valid general obligation of the town of Concord, Massachusetts, and the principal of and interest on the bonds are payable from taxes which may be levied upon all taxable property in the town, subject to the limit imposed by Chapter 59, Section 21C of the general laws."[60]

The limitation on local taxing power increases the risk that a locality will have difficulty meeting principal and interest costs on long-term debt. If a city or town is taxing at the limit allowed by law and unexpected expenses occur or service delivery costs increase significantly, the community will be compelled to choose between maintaining service delivery at a desired level or keeping up with the debt service payments. Most municipalities will enter into a default condition only under the most extreme conditions of duress. There may be political forces at work, however, that pursue short-term goals of service delivery over the less tangible longer-term goal of protecting the municipality's reputation in the municipal bond market.

It is the assessment of bond market analysts that for Concord, such a day of reckoning does not loom near in the foreseeable future. Through the quick absorbtion of the Concord issue, the bond market has indicated that a tax limit itself need not increase the cost of capital facilities financing by a large amount.

This finding should be of some comfort to towns in Massachusetts that are similar to Concord. Such towns can expect some increase in finance costs compared to a hypothetical identical town with unlimited

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[60]Fitzgerald, Joan, "Mass. Cities and Towns to Sample Bond Market," The Boston Globe, March 12, 1981.

taxing power, but the price increase will likely be rather small. The question remains- what about towns that are not so similar in fiscal composition to Concord? This question is addressed in the next chapter, which anticipates a differential impact of Proposition 2-1/2 on municipal access to the bond market.

CHAPTER VII. DIFFERENTIAL IMPACTS IN CITIES AND TOWNS

This chapter explores a set of fiscal indicators to assess the vulnerability of any city or town to the effects of Proposition 2-1/2. The analysis looks at the determinants of bond ratings since the bond ratings guide investors and underwriters who might bid on a municipal bond issue.

The bond ratings assigned by Moody's and Standard & Poor's provide a relative index of the fiscal security behind municipal bond issues. While the rating agencies are certainly not omnicient, and the validity of the ratings themselves is the subject of some debate, these ratings are widely used by investors who are unable themselves to conduct an independent review of bond issue qualities.

This chapter is in three sections, beginning with an explanation of the theory behind municipal bond rating analysis. The second section presents a statistical study of pre-2-1/2 determinants of bond ratings. A stepwise discriminant analysis program was used to investigate which of a set of fiscal indicators appear to explain the 1980 distribution of bond ratings. Building upon these findings, in the third section, a subset of indicators was selected to differentiate between cities and towns based on the prospective impacts of the 2-1/2 initiative. It is assumed that the key deterministic indicators for bond ratings and bond market access will change significantly as a result of the changes introduced by Proposition 2-1/2.

In conjunction with an ongoing project at M.I.T.'s Department of Urban Studies and Planning, data were collected for 143 Massachu-

setts cities and towns- those with population of 10,000 or more in 1970. Approximately 30 variables per town were assembled from a variety of centralized data sources, including the Massachusetts State Department of Revenue, and the 1977 Census of Governments,, among others. The intention was to pull together a broad range of fiscal and socio-economic information that the literature suggests is relevant to bond market performance. A review of a portion of this literature comprises the following section.

Determinants of Bond Ratings: A Theoretical Overview

What the rating agencies purport to create with the system of ratings is an index of the amount of risk to the investor associated with a municipal bond issue. High ratings, Aaa and Aa, reflect a local fiscal condition that is very secure in the short and long-terms. One step lower, rating A, indicates short-run fiscal security with uncertainty about the long-run conditions. Baa-rated securities reflect concern over the short-run fiscal conditions as well, indicating a precarious fiscal balance for the community.

Risk to a municipal bond market investor can take several forms. Most severe is the "ultimate risk" that the issuer will default on its obligation to meet principal and interest payments as they come due.[61] Also of concern to the investor is his ability to sell the bond in the secondary trading market "at a relatively good market price prior to maturity."[62] The rating agency examines a variety of data provided

[61] Op. Cit., John E. Petersen, The Rating Game, p.46.

[62] Ibid.

by the municipality to arrive at an assessment of these risks associated with the issue.

There is a certain mystique surrounding the rating process. Because reporting practices of local governments vary, and because of the extreme diversity of local governmental units, there is no precise system or formula for calculating bond ratings. The ratings are designated by a select cadre of municipal bond analysts according to a subjective weighting of the trends in fiscal indicators as is explained below.

There has been concern that this rating system could lead to arbitrary rating practices because of the lack of regulation of the rating agencies. The agencies, especially Moody's Investors Service, have responded to these apprehensions by clarifying their assessment practices and systematizing the rating process to the extent possible. It remains true, however, that the rating designation is a subjective process that relies on the judgement, and hence possibly the bias, of the ratings analysts.

In general, according to Howard Mischel of Moody's Investors Service, Inc., the rating is determined through examination of fiscal trend data falling into the following four main categories: 1) economic, 2) debt, 3) financial, and 4) governmental.[63] Trends in a community's economic base reveal what the capacity for debt issuance might be. The state of the local economy will affect the ability of the locality to generate revenue through such means as property taxes, sales taxes, and income taxes. Important economic considerations include family

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[63]Op. Cit., Howard Mischel.

income, per capita property valuation, employment mix, and the diversity of the tax base. The existing debt burden is an indicator of the extent to which the community's resource capacity has already been extended. The relationship between total debt and taxable wealth is important in the determination of ability to meet future debt service obligation.

Investigation into financal trends involves a look at debt issuing policy and the adequacy of capital planning. The term structure and repayment schedule of existing debt is also quite important. Governmental factors, especially financial management capacity, are considered very carefully by the rating agency. Mischel, described these factors as follows:

> "The growing complexity of municipal entities requires the analyst to take into account numerous administrative and governmental factors. We look toward a municipality's organization, diffusion of responsibilities, degree of professionalism, and sufficiency of powers to perform its functions. Management controls and the availability and quality of documents, annual reports, and planning documents, add to our impressions of administrative performance. Limitations on taxing power, assessment practices, litigation, provision of services, and relationship to overlapping governmental units, are all studied."[64]

These rating factors are "studied" by the municipal bond analysts who combine the various criteria according to some implicit weighting scheme to form the bond rating- a simple letter grade. The communities are urged to provide to Moody's as much additional information as is appropriate. Oftentimes, the local officials are unsure about which

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[64] Ibid.

factors might have caused them to be assigned a low rating, however, and hence don't know what extra information would be helpful.

In order to gain a clearer understanding of how these factors translate into bond ratings, and to guide the researcher in collection of data with which to study this problem, it is valuable to describe the specific indicators that are used by rating agencies to measure the fiscal security of an issuing community. In John E. Petersen's essay in The Rating Game, nine such indicators have been suggested as the basic criteria necessary to any evaluation of a municipality's credit, as follows:

1. Current population.
2. True (market) taxable valuations.
3. Gross indebtedness.
4. Net indebtedness (debt after deducting self-sustaining obligation, sinking funds, state assistance, etc.).
5. Combined indebtedness (including "overlapping debt", i.e., the proportionate share of the indebtedness of any other governmental unit for which the municipality is liable).
6. The ratio of combined debt to population.
7. The ratio of combined debt as a percentage of full market valuations.
8. The ratio of combined debt as a percentage of per capita income.
9. The community's historical tax collection record including levies, collections, and delinquencies.[65]

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[65]Brenton W. Harries, Financing Municipal Facilities, Vol. II, pp. 197-198, cited by John E. Petersen, in The Rating Game, (Op. Cit.) p. 78.

Petersen maintains that three debt ratios are the most important indicators of municipal credit worthiness.[66] The ratio of debt to property valuation reveals how close to the statutory limit an indebtedness (where such limits exist) the community is, as well as the extent of the existing credit load in the locality. For most cases, a debt to property value ratio of 10 percent indicates exhaustion of local debt capacity.[67] Debt per capita also measures credit load. For cities of less than 25,000, it is "unhealthy" to have more than $200 (1967 dollars) in debt per capita. For larger cities that are under 250,000 population, $250 debt per capita is acceptable, and for cities greater than 250,000, $300 debt per capita is considered reasonable."[68] Perhaps the most direct measure of the current burden of the existing debt load is the percent of current revenues allocated to debt service. An allocation of less than 10 percent is preferred in evaluating credit-worthiness, 15 percent is worrisome, and over 20 percent is exceptionally bad.[69]

Most of the above indicators focus on the debt history of the locality, which is one important rating factor category. If the debt category were the sole determinant of bond ratings, then it would be possible to devise a relatively objective formula based on the above rules of thumb cited by Petersen. In reality, however, the other

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[66] Op. Cit., The Rating Game, pp. 78-79.

[67] Ibid. (Petersen cites a 1963 study by the Bank Management Committee of the American Bankers Association.)

[68] Ibid.

[69] Ibid.

three categories of municipal credit identified by Mischel must also be considered. Furthermore, the economic and governmental categories, and to a lesser extent the financial category, tend to be more subjective in nature.

Among the relatively objective financial indicators for which rule-of-thumb boundary levels exist are the following items: the percentage of outstanding debt repaid in the previous year should not be less than 5 percent; a high percentage of capital outlays should be funded by current revenues; tax collection should be close to 100 percent of assessments, and not less than 95 percent; combined ad valorem taxes on property, including overlapping units, preferably should be under 4 percent; current deficits and short-term borrowing should be avoided.[70]

Too much reliance should not be placed on these rule-of-thumb boundary levels in local credit analysis. Acceptable levels vary situationally between cities. For example, tax anticipation borrowing is often necessary to smooth out a lumpy revenue collection schedule, as is the case in Massachusetts. Furthermore, acceptable levels will change over time, because of inflation or because of changing views of what constitutes prudent management policy. Thus, even the most "objective" criteria will require case-by-case review of the sort performed by Moody's and Standard & Poor's.

For an overview of the subjective evaluation factors in the socio-

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[70]Op. Cit., The Rating Game, p. 79.

economic and governmental categories, I will defer to a description by Brenton W. Harries that is reproduced in Petersen's essay in The Rating Game. Harries poses the following questions that must also be considered about a community:

> "Is it a one industry community? Is there diversification in industry? Is there a heavy dependence on extractive industry? What are its leading sources of income? What is the percentage of industry contribution to the tax base? Other pertinent facts relative to the economy of the area are: Is the community a resort area, subject to wide economic swings? What are the value of its homes, its income levels, relative wealth, personal savings, etc.? Is the community the location of a major shopping center and related commercial activities, etc.?
>
> The character of the community plays a vital part in its overall evaluation. What are the educational attainments of its residents? What percentage of its homes are owner-occupied? Is there evidence of civic pride, of active community programs for recreation and cultural activities, etc.?
>
> In examining the indebtedness of a community, weight must be given to its past record: its current indebtedness and future financing needs. Does it have a sound capital improvement program? What is its schedule of debt retirements? Is its borrowing margin within legal debt limitations, etc.?"[72]

Harries mentions the character of the community as one important factor. Within this factor are some other attributes that also appear to be significant, including the racial, ethnic, religious, and political make-up of the community. Part of the problem faced by communities undergoing a rating evaluation is that they have no way of knowing which of these many factors are most important in their rating determination. If it was clear that a change in an indicator would boost

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[72]Op. Cit., Brenton W. Harries, p. 198.

the rating, then the community could work toward such a change. As it is, the multiplicity of factors and indicators might serve to illuminate the theory of bond rating determinations while obfuscating the actual decision criteria for a given case.

The next section reviews a number of quantitative analyses that have used cross-sectional statistical methods to reveal which of the various indicators most adequately explain the bond ratings for a sample of cities and towns. One such study, using stepwise discriminant analysis, was undertaken for the larger cities and towns of Massachusetts using the data assembled for this thesis. Comparing the results of the studies reveals that the most significant determinants vary according to the sample characteristics and when the analysis was undertaken. These issues are discussed below.

Determinants of Bond Ratings: A Quantitative Approach

When Moody's performs a rating analysis for a city or town, the locality supplies the agency with as much of the relevant data as is available. A problem for the researcher is to assemble a comparable data base for a large enough sample to permit a cross-sectional statistical analysis. For this study, I have collected as many of the indicators identified in the previous section as were readily accessible for a large number of Massachusetts communities. Major data sources include the 1977 Census of Governments, the 1970 Census, and the Massachusetts State Department of Revenue.

The analysis was restricted to those cities and towns whose population was 10,000 or greater in 1970, because detailed Census of

Governments financial data are available for these units.

From these data, 15 indicators were derived or selected for inclusion in the stepwise discriminant analysis. These variables include:

1. FRES- Percentage of property tax base that is residential.
2. AVGINC- Per capita income.
3. FOWNER- Percentage of residences that are owner-occupied.
4. POP80- Population, 1980, in thousands.
5. PCHG7080- Percent change in population from 1970 to 1980.
6. TDOPEQV- Total debt outstanding expressed as a percentage of equalized (full market) valuation in 1980.
7. TDOPC- Total debt outstanding per capita in 1980.
8. ETR- Effective property tax rate in 1980, (mill rate).
9. TDOPAV- Total debt outstanding expressed as a percentage of assessed valuation in 1980.
10. PTXPC- Property tax per capita in 1980.
11. EQV- Equalized (full market) property valuation in 1980.
12. IGDPGE- Interest on general debt expressed as a percentage of general expenditures in 1977.
13. IRPTR- Intergovernmental revenue expressed as a percentage of total revenues in 1977.
14. STDPTDO- short term debt expressed as a percentage of total debt outstanding in 1977.
15. Y25- Number of years it will take to reach the 2-1/2 percent property tax limit in compliance with Proposition 2-1/2.
16. MOODY- Moody's rating, 1980.

The goal of the stepwise multiple discriminant analysis* is to select a subset of these variables that allows the most accurate prediction of the Moody's bond rating assigned to each city and town in the sample. While this technique reveals which variables will maximize the prediction, the coefficients of the classification function are not as rich as those in a regression analysis, for example, which can show the elasticities of the dependent variable with respect to the independent variables.

Donald L. Rubinfeld devised a regression program for categorical data that he applied to the bond ratings of 128 northeastern U.S. cities and towns.[72b] Rubinfeld was able to predict 67 percent of the ratings (into four rating categories- Aaa, Aa, A, Baa) using the regression technique, and 68 percent using multiple discriminant analysis. His explanatory variables included: 1) the ratio of debt to assessed valuation (negative coefficient); 2) assessed full value (positive coeffient); 3) overall net debt (negative coefficient) 4) median family income (positive coefficient); 5) rate of growth in the population

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*The stepwise program[72a] chooses one additional variable on each pass through the data that optimizes the predictions according to a "classification function." The classification function consists of a constant term and a coefficient for each variable for each category. Every observation (city or town) is assigned to the rating category that yields the highest value of the classification function.

[72a] BMDP7M- Stepwise Discriminant Analysis, Department of Biomathematics, University of California, Los Angeles, CA, 1980.

[72b] Rubinfeld, Daniel Lee, An Econometric Analysis of the Market For General Obligation Bonds, Ph.D. Dissertation, Unpublished, M.I.T., June 1972, pp. 56-73

(negative coefficient for high growth); 6) percent of taxes uncollected in previous year(negative coefficient); and 7) dummy variable for state.

Another study of bond ratings using stepwise multiple analysis was carried out by Aronson and Marsden in 1980 using data from Moody's on "25 Leading U.S. Cities".[72c] Very high predictive accuracy, (83%), was attained when nine explanatory variables were used to predict bond ratings into five categories. Interestingly, the best single variable was the percent of population in the city that is black. Accuracy of 63 percent was achieved when the percent of black population was excluded, and 42 percent of the ratings could be predicted by the variable alone.

For the analysis of Massachusetts' pre-2-1/2 bond ratings, no such racial variable was included. A direct comparison between the results of the studies is difficult because of the different rating categories selected for each study and because of the differences in the samples. Rubinfeld's study is more similar to this analysis in that he selected a diverse sample of New England cities and towns rather than the 25 largest cities included in Aronson and Marsden. In this study, the sample size was reduced to 141 Massachusetts communities because two towns had no rating assigned to them. Ratings ranged from Aaa, of which there were six, to Baa, of which there were also six. There are actually six categories of ratings within this range rather than the four described earlier, because Moody's differentiates between "low"

[72c]Aronson, Richard J. and James R. Marsden, "Duplicating Moody's Municipal Credit Ratings", Public Finance Quarterly, Vol. 8, No. 1., January 1980, pp. 97-107.

and "high" cities in the A and Baa categories. A high A-rating is denoted as A1; similarly, a high Baa is denoted as Baa1.

The stepwise discriminant analysis program selected three of the 15 explanatory variables to discriminate between the six bond rating categories. The first variable selected was ETR, followed by PTXPC, and the third was FOWNER. The accuracy level that was achieved using these three variables and all six rating categories was only 49.6 percent. All six of the Aaa ratings were correctly classified, and most of the other ratings were predicted within one rating of the actual category. Table 4 presents the classification matrix from this solution. The correct classification predictions are underscored.

A second program was run in which the rating categories were collapsed into three groups. Table 5 shows this classification matrix, which is considerably more accurate, although less detailed than the six category matrix. The rating categories were reduced by including Baa1 in category Baa, A1 in category A, and by collapsing Aaa and Aa into a single category called "AAAAA".

Not only does the three category analysis succeed in predicting more cases correctly than the six category analysis, with a 70 percent success rate, but it is also easier to see the relationship between the indicators and the ratings with fewer categories. Table 6 shows the means for all of the selected indicators within each of the three classifications of bond ratings.

TABLE 4

CLASSIFICATION MATRIX USING SIX RATING CATEGORIES
(Explanatory Variables: ETR, PTXPC, FOWNER)

Group	Percent Correct	Predicted Number of Cases Classified into Group: Aaa	Aa	A1	A	Baa1	Baa	Actual Total in Group
Aaa	100.0	6	0	0	0	0	0	6
Aa	35.0	8	14	9	7	1	1	40
A1	30.3	3	7	10	11	1	1	33
A	63.5	3	2	8	33	5	1	52
Baa1	100.0	0	0	0	0	4	0	4
Baa	50.0	0	1	0	0	2	3	6
Total	49.6	20	24	27	51	13	6	141

TABLE 5

CLASSIFICATION MATRIX USING THREE RATING CATEGORIES
(Explanatory Variables: ETR, PTXPC, FOWNER)

Group	Percent Correct	Predicted Number of Cases Classified into Group: AAAAA	A	Baa	Actual Total in Group
AAAAA	65.2	30	14	2	46
A	75.3	16	64	5	85
Baa	90.0	1	0	9	10
Total	73.0	47	78	16	141

TABLE 6

MEAN VALUES OF INDICATORS WITHIN THREE RATING CATEGORIES

Variable	Units	Group AAAAA	Group A	Group Baa	All Groups
1. FRES	(%)	70.41	70.73	57.00	69.65
2. AVGINC	($000's)	11.86	10.77	7.89	10.92
3. FOWNER	(%)	67.13	72.72	40.74	68.63
4. POP80	(000's)	35.95	23.91	123.20	34.88
5. PCHG7080	(%)	2.04	6.70	-6.53	4.24
6. TDOPEQV	(%)	2.20	2.60	5.63	2.69
7. TDOPC	($)	312.58	288.30	385.30	303.10
8. ETR	(mills)	39.44	37.55	65.25	40.13
9. TDOPAV	(%)	4.28	6.28	16.14	6.33
10. PTXPC	($)	591.34	458.50	453.19	501.46
11. EQV	($ millions)	510.97	279.31	795.71	391.51
12. IGDPGE	(%)	2.49	2.94	4.62	2.91
13. IRPTR	(%)	23.57	29.99	39.62	28.58
14. STDPTDO	(%)	3.95	3.24	13.40	4.19
15. Y25	(years)	3.09	3.03	6.14	3.27
16. MOODY		1.87	3.61	5.60	3.18

Table 6 provides some useful insights into the determinants of bond ratings. First, a scan of the mean values of indicators reveals that many variables do not rise or fall monotonically across rating categories. The percentage of residences that are owner occupied, (FOWNER), for example, is lower in the AAAAA category (67%) than in the A category (73%) and the Baa category is considerably lower than either of the others (41%). Full market property valuation is higher for the highest rated category ($510 million) than the middle category ($279 million), and the lowest rated cities and towns have the highest average at $796 million.

As the Moody's spokesmen claim, the ratings are based on the interactive effects of the indicators, so that no indicator alone can be expected to reveal much about the ratings. The effective tax rate (ETR) was the first variable selected out by the program as a predictor of bond ratings. Recalling the rule-of-thumb from the previous section that this indicator is best kept under four percent, the rule is validated by Table 6. The highest rated communities show a mean ETR of just under 4 percent, while the lowest rated communities have the high mean of 6.5 percent.

It is somewhat surprising (to me) to note that the property tax per capita (PTXPC) is best at high levels as far as ratings are concerned. This finding is quite logical, however, when the PTXPC and ETR are considered together. A high value for PTXPC coupled with a value for ETR of less than 40 mills indicates a "rich" tax base and therefore good debt carrying capacity. The lowest rating category

exhibits a very high tax rate but still a low property tax per capita. This combination implies a relatively scant capacity to raise additional revenue to meet debt service requirements.

To summarize the thrust of the results of the discriminant analysis, it seems that the best ratings are assigned to communities with a high-yield tax base. Residential neighborhoods in which there is a high percentage of owner-occupied housing are generally wealthier, less dense, and have higher property values in relation to service costs than rental dominated residential neighborhoods. High taxes per capita generated by a low property tax rate indicate that there is a high elasticity of revenues with respect to the tax rate.

These three indicators have been shown to be statistically important determinants of the bond ratings in Massachusetts in 1980. Table 6 shows that a number of other indicators are also important factors. One item that is striking, and at first blush counter-intuitive, is the relationship between IRPTR and Moody's ratings. IRPTR, intergovernmental revenue as a share of total revenue, is shown to be significantly lower for the highest rated communities (with a mean value of 24%) than for the lowest rated communities (with a mean of 40%). The A rated communities fall between, at 30%.

What the data tell us is that a high reliance upon the property tax is actually preferred by the rating agency (and hence is better for the bond market) over a reliance on intergovernmental (i.e. state and federal) revenue sources. This finding is rather surprising to a student of economics and public finance who was taught that revenue

sharing from the federal to the local level is more efficient in both an allocative and distributional sense. The allocative efficiency relates to the supposed freedom from behavioral distortion associated with a broad based federal income tax. The local property tax is frequently criticized as causing distortions in residential and business locational decisions, although many analysts assert that such distortions are minimal. A similar controversy exists as to the relative merits of the present property tax system compared to the present income tax system regarding the progressivity or regressivity of either. For all its failings or perceived failings, however, the rating agencies believe that a community with a relatively high reliance on the property tax compared to intergovernmental revenues is a better credit risk than a community that relies less upon the property tax for local revenues.

The property tax is preferred as a local revenue source mainly because it offers both control and flexibility to the local government. Such control and flexibility can be vitally important to a municipality on the threshold of serious financial difficulty. In his book, The Appraisal of Municipal Credit Risk, Wade S. Smith describes the processes by which cities can be overcome by financial difficulties.[73] Financial problems usually begin with a current cash deficit, and the problem will continue and worsen if such deficits are allowed to recur. Smith cites either revenue failure or over-expenditure as the initial problem, for which corrective action is necessary. The ability of a municipality to take the necessary remedial steps depends largely

[73]Smith, Wade S., The Appraisal of Municipal Credit Risk, Moody's Investors Service, New York, N.Y., 1979, pp. 111-126.

upon the extent to which local revenues are derived from property taxes. Smith explains this relationship between fiscal security and the property tax as follows:

> "A state or local governmental unit on the threshold of serious financial difficulty can escape it, but time is short and decisive action is necessary. Experience suggests that the causes of the difficulty must be addressed in the budget for the year following that in which severe revenue failure or over-expenditure occurs...
>
> The danger to be avoided is the unwieldy accumulation of operating debt- an unmanageable cumulative cash deficiency, with resulting cash stringency. The remedy is to liquidate the deficit, whether by increasing revenues or by reducing expenditures, or by a combination of the two...
>
> The general property tax is the balancing element in most local government budgets, the one revenue item ordinarily variable by the local governing body independently of state or federal legislative bodies. It is frequently subject to legal limitations, however, and it is always subject to economic limitations.
>
> Because it is the balancing element in the budget, the property tax is a particularly suitable base for the measurement of the potential difficulty of eliminating an accumulated cash deficiency. Also, because of the decline in the relative importance of the property tax as a revenue source, it is a more sensitive indicator than total revenues...If a unit has a 50% dependency on the property tax, it is clear that a deficiency equal to 5% of total revenues will be equal to 10% of the property tax, while at 40% dependency, it would equal 12.5% of property taxes, and at 30% dependency, 17%."[74]

Thus it would seem that Massachusetts municipalities, famous for their "over-reliance" on the property tax, will be losing a significant credit advantage as Proposition 2-1/2 goes into effect. The assertion by Smith that a high proportion of revenues derived from the property tax is highly regarded in the municipal bond market is clearly reflected by the characteristics of the variable IRPTR in Table 6.

The degree to which this lost advantage will jeopardize municipal

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[74] Ibid.

standing in the credit market depends directly upon local fiscal conditions in a given city or town. We have seen that the town of Concord has suffered no competitive loss in her ability to sell bonds thus far. Other cities and towns are less fortunate, however. The question then becomes which cities and towns are more vulnerable and how can this vulnerability be determined?

This question is the subject of the next section. Thinking prospectively about the future under Proposition 2-1/2, one can deduce (albeit with no statistical security) which of the 15 indicators might emerge as the decisive determinants of market acceptance of local bond issues from this state.

Determinants of Municipal Vulnerability to Proposition 2-1/2

Municipal vulnerability to the bond market impacts of Proposition 2-1/2 is a function of at least the following three factors: 1) the fiscal condition of the municipality before the imposition of Proposition 2-1/2; 2) the extent of the revenue cutbacks mandated by the tax limit law; and 3) the current local requirements for long-term capital borrowing. These factors taken together will determine whether or not a municipality will need to approach the bond market, and if so, how the market will appraise the credit risk associated with the bond issue.

One needn't do much analysis to identify the city that is probably in the worst shape financially. Boston is almost a text book case of fiscal stress in a large city. On the revenue side, there is the shortfall caused by the 2-1/2 mandated auto excise tax reduction, coupled with court-ordered property tax rebates stemming from a ruling known as the Tregor case.[75] To compensate certain property owners for improper assessment practices which resulted in commercial taxes being levied at a higher rate than residential property taxes, the city is required to pay tax rebates amounting to about $90 million.[76] Contributing to the city's fiscal problems on the expenditure side of the budget is the

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[75]Cowen, Peter, "Fiscal Crises: Boston's Week for Decisions," The Boston Globe, April 7, 1981, p. 19.

[76]Eisner, Alan, "Money Woes Unforeseen, System Paralyzed (says) White," Boston Herald American, May 5, 1981, p. A4.

overspending by the School Department in 1981 of up to $40 million.

Political stalemate has thus far frustrated all attempts by the Mayor and the City Council to forge a financial solution to the impending crisis. The Mayor would like to float a long-term bond issue of $90 million, and the council has proposed a $75 million issue, to pay off the property tax rebates.[77] The political snafu over mayoral powers has precluded any agreement necessary for a bond authorization. Without such a bond issue, the city will have to fund the rebates and the School Department's over-spending out of current revenues in fiscal year 1982, which must also be reduced by 15% to comply with Proposition 2-1/2.

Boston seems to have every fiscal problem in the book- revenue shortfall, mandated property tax rebate, over-expenditure, declining population, deteriorated infrastructure, and a strict tax limitation. Assuming no changes in the tax limit law, Boston will take 10 years of 15% cuts in the tax levy to reach the 2-1/2 % tax rate, according to calculations based on data from the Massachusetts Taxpayers Foundation.[78] With such a tenuous financial situation which places the city almost at the brink of bankruptcy, it is very likely that if Boston does float a large bond issue, the interest rate will be very high.

The problems that are currently facing the City of Boston have made the city very prominent in the media as the threat of a major urban

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[77]Op. Cit., "Boston's Week for Decisions.

[78]Massachusetts Taxpayers Foundation, Inc., Municipal Financial Data, 1980.

bankruptcy grows more imminent. It is more difficult, however, to discern which other cities and towns in the state are also facing serious financial problems. Clearly, in Boston, all three factors listed above tend toward a high vulnerability to bond market impacts. This study examines how these factors might reveal such vulnerability in the remainder of the cities and towns in the sample.

The 143 communities in the sample are quite diverse, so they have been categorized across two dimensions- population size, and recent growth trends. The sample includes only those municipalities with population greater than 10,000. These units were divided into three population groups: those with population between 10,000 and 25,000; those units with population between 25,000 and 50,000, those larger than 50,000.

Recognizing that many of the older cities have experienced a pronounced loss in popoulation over the last 10 years, while others have grown significantly over this period, three growth categories have also been specified. Declining cities and towns are defined as those with a population decrease between 1970 and 1980 of greater than 4 percent. Growth communities are specified as those with a population increase of greater than four percent. Those communities whose population change over the decade fell beteen plus or minus four percent were classified as stable.

The 143 cities and towns were cross-classified by these two dimensions to form nine groups or clusters of communities. The breakpoints were chosen subjectively by examining the distributions of communities; other groupings might also be appropriate. The reason for clustering

the sample this way is to create relatively homogenous groups so that fiscal characteristics falling outside the norm for each group can be spotted. It is believed that there may be major differences between communities because of size or growth trends that do not really reflect differing fiscal conditions in the sense that is intended here.

In conducting rating evaluation, the rating agencies recognize that there will be differences in the values of fiscal indicators between communities of different sizes. Moody's Investor's Service, for example, distributes guidances for its analysts showing the range in values of net debt per capita and net debt ratio to estimated full value. The low, median and high values for these ratios are listed by Moody's for nine population groups of cities.

Table 7 shows how the Massachusetts communities are distributed between the categories defined by population size and growth rate.

TABLE 7

Distribution of Sample Communities Into Population and Growth Clusters

	PCHG 7080							
POP80	Declining		Stable		Growing		Total	
	Number	(%)	Number	(%)	Number	(%)	Number	(%)
10,000 to 25,000	11	(7.7)	36	(25.2)	35	(24.5)	82	(57.3)
25,000 to 50,000	16	(11.2)	13	(9.1)	11	(7.7)	40	(28.0)
50,000 and over	15	(10.5)	5	(3.5)	1	(.7)	21	(14.7)
Total	42	(29.4)	54	(37.8)	47	(32.9)	143	

It is difficult to assess the need for long-term capital borrowing for a large sample of communities. Individually, one can examine capital spending plans or special capital needs such as in the case of

Boston. Another indicator of capital requirements that is centrally available, (but not included in the data file that has been compiled for this study), is the amount of bond anticipation notes, (BANs), have been issued by cities and towns over the past two years. BANs are issued by localities that intend to float a bond issue within two years, but desire some initial funding earlier than the scheduled issue. Frequently a number of separate capital improvement projects will be undertaken within a span of several years, which can be aggregated into a single large bond issue. Such finance packages save on the fixed expenses, such as advertising, printing, and attorneys' fees, that are incurred for a bond issuance. A community will also issue a BAN to avoid entering the bond market when interest rates are high, with the hope or assumption that the rates will fall in the future. There is a certain amount of investment strategy that requires risk taking on the part of local government- such as whether to enter the bond market today and risk getting locked-in to a high interest rate, or to postpone borrowing and risk even higher rates. (Such "playing-the-market" is what Anthony Logalbo did very successfully when Concord sold a bond issue last March.)

Bond anticipation notes are one mechanism available to municipal borrowers that allows for flexibility in bond issuance decisions. State law in Massachusetts requires that such notes be retired with long-term funding within two years. From information about BAN issues, therefore, one can determine which cities and towns are due to enter the bond market for long-term issues. There are proposals in the legislature, how-

ever, that might extend the two year limit on BANs.

The purposes for which long-term borrowing is required will vary according to the size and growth characteristics of the commuity. The growing communities require additional new infrastructure- roads, water and sewer systems, utilities, public buildings, etc.- to support the increases in population. As will be discussed in Part III, many of these new capital expenditures can be financed by revenue bonds instead of general obligation bonds.

The larger cities (over 50,000) are generally declining in population, and will need capital for replacement of worn-out existing infrastructure more than for additional facilities. Boston needs to borrow to pay the property tax rebates, but this is probably a special case. These points are raised but not resolved in this study. A quantitative assessment of long-term capital needs for Massachusetts cities and towns is beyond the scope of this paper.

The extent of the revenue cutbacks mandated by Proposition 2-1/2, on the other hand, is accessible information. The tax limit law requires a local unit to reduce its tax levy by 15 percent per year until the tax rate is reduced to 2-1/2 percent. A city with a pre-2-1/2 tax levy that is exactly 15 percent over the 2-1/2 percent target levy would achieve the required limit in one year. The number of years that the community must incur a 15 percent levy cutback is used as the indicator of the extent of cutbacks required by Proposition 2-1/2, (factor 2 above).

From the investor or rating agency perspective, repeated revenue cutbacks at the local level pose a threat to bond security. Such cutbacks will have to be reflected in comparable expenditure reductions that will adversely affect the adequacy or quality of service delivery. Falling levels of service delivery, in turn, are likely to create pressure on city government to restore services to former or "reasonable" levels. These pressures will manifest themselves as political lobbying or protests and demonstrations, such as the ones that have already taken place in Boston in response to the closing of police stations in certain neighborhoods, Resistance to service cuts is likely to be vocal and politically threatening. The bond holder is very uncomfortable knowing that a shrinking local budget must be divided between debt service payments and service delivery requirements. The existence of a tax limit strips away the insulation from political forces that is usually afforded a full faith and credit general obligation bond.

Every year that the levy must be reduced adds intensity to the stress and pressures on the city government. One of the factors considered by Moody's in suspending ratings last March was the number of years that a tax reduction would be required. The ability of a community to absorb these revenue reductions depends upon the first factor listed at the start of this section- the "fiscal condition" of local units prior to 2-1/2.

Fiscal condition is a vague term that will gain definition through the selection of indicators to answer the following question: What factors will become important in the appraisal of credit risk as Proposition

2-1/2 is being implemented over the next several years? The discriminant analysis in the previous section demonstrated that the effective tax rate (ETR), property tax per capita (PTXPC), and percent of residences that are owner occupied (FOWNER) are the best indicators for predicting ratings within the set of 15 variables tested. Other than ETR, these variables do not seem to shed much light on post-2-1/2 creditworthiness.

One of the factors mentioned by Petersen in his discussion of bond rating determinants is the extent to which a community has exhausted its debt capacity. Recalling the rules-of-thumb on credit load, the ratio of debt to property value should not exceed 10 percent; debt per capita should not exceed $200 in communities of less than 25,000, or $250 to $300 for larger cities; and debt service should comprise less than 10 percent of current revenues.

I believe that these credit load indicators will emerge as the more important indicators of post-2-1/2 credit risk. In the absence of a tax limit, debt capacity is determined either by statutory limit, or by economic constraints on the amount of taxes that will be tolerated by the voters. The latter constraint is never sharply defined, until the tolerance limit has been surpassed, as has evidently occurred in Massachusetts. Under the current tax limit law, which allows no exemption for debt service taxes, the ceiling on debt capacity has dropped significantly. Investors and rating analysts will therefore want to look very closely at the three credit load indicators to spot those communities that might be overextended or close to their limits already.

After Proposition 2-1/2, the rating agencies will probably recon-

sider the relative advantages or disadvantages of a high proportion of local revenues from intergovernmental sources. In a previous section, Wade S. Smith described how a percentage increase in local revenues would require a larger percentage increase in property taxes, depending upon the proportion of local revenues that is supplied by the property tax. This "multiplier effect" also works in reverse. If property taxes comprise 75 percent of local revenues and must be cut by 15 percent, then local revenues will fall by 11.25 percent. If property taxes comprise only 50 percent of local revenues, then the same levy reduction will decrease local revenues by only 7.5 percent. Thus while before Proposition 2-1/2 was passed, a high proportion of revenues from property taxes was advantageous, this advantage has diminished after Proposition 2-1/2. Nonetheless, the wealthier towns are still the ones with the smallest share of intergovernmental revenue, so, IRPTR will not indicate a poor credit risk at low values of the indicator.

Finally, one of the forementioned debt ratios serves doubly well as an indicator. The interest on general debt as a proportion of current revenues, (expressed in the data file as a proportion of general expenditures (IGDPGE) which is essentially the same concept) serves as an indication of credit load on one hand, and as an indicator of the burden of expenditure cuts on the other. Debt service is one of several expenditure items that is "fixed", i.e., is set contractually and cannot be altered at the discretion of local government. Other fixed expenditures include pension contributions and assessments by overlapping jurisdictions. Some analysts include such things as emergency service personnel, but

these items are very ambiguous as to what constitutes a minimum adequate service level.

Ideally, the indicator would be fixed expenditures as a percent of current revenues (or expenditures) but data limitations encourage use of IGDPGE instead. The familiar logic applies again here, that if 20 percent of the current budget is allocated to fixed costs, and expenditures must be reduced by 15 percent, then non-fixed expenditures must be cut by 18.75 percent.

The indicators I have chosen include the following: 1) TDOPEQV; 2) TDOPC; and 3) IGDPGE. Rather than rely on Petersen's rules-of-thumb, the selection procedure will be to calculate the mean and standard deviation for these variables within the nine population/ growth-trend clusters, and to search for those cities and towns with one or more indicator values that are 1.5 standard deviation units above the group mean. Table 8 shows the municipalities with their respective indicator scores that have been identified by this process.

The results displayed in Table 8 show 24 municipalities that will be worse off compared to other communities within the cluster. This classification system is rough at best, but it does provide some insight into the extent of difficulties that will be faced by these communities. Of these indicators, the combination of a high Y25 with a high value for IGDPGE probably implies a very difficult expenditure cutback process in those communities.

The next chapter considers what are the options for local governments. A brief summary of the bond market options at the local level plus a review of legislative proposals at the state level are included.

TABLE 8 (cont'd.)

STABLE: 25,000 to 50,000

	Y25	TDOPEQV	TDOPC	IGDPGE
Group Means:	3.5 years	3.4%	$366	3.8%
Braintree	3.5		817	
Revere	6.9			16.0
Taunton	4.0	14.9	1058	

STABLE: 50,000 and Over

	Y25	TDOPEQV	TDOPC	IGDPGE
Group Means	4.6 years	4.6%	$386	2.8%
New Bedford	5.2	9.5	582	5.1

GROWTH: 10,000 to 25,000

	Y25	TDOPEQV	TDOPC	IGDPGE
Group Means	2.3 years	2.0%	$269	2.4%
Amesbury	4.7	8.1	634	
Burlington	3.4	4.6	901	6.4
Milford	3.4	6.4	632	5.8
Sharon	3.8			5.1

GROWTH: 25,000 to 50,000

	Y25	TDOPEQV	TDOPC	IGDPGE
Group Means	2.4 years	2.7%	$346	3.5%
Billerica	4.1	5.8	691	
Marlborough	3.9	5.9	669	
Westfiled	2.6			9.1

Mean for 143 Communities:

	3.3 years	2.2%	$196	2.7%

TABLE 8

DECLINING: 10,000 to 25,000

	Y25	TDOPEQV	TDOPC	IGDPGE
Group Means:	2.7 (years)	2.4%	$282	2.5%
Clinton	2.8	5.6		
Danvers	2.2		843	
Holliston	3.0	5.4		

DECLINING: 25,000 to 50,000

	Y25	TDOPEQV	TDOPC	IGDPGE
Group Means:	4.0 (Years)	2.5%	$290	3.3%
Holyoke	5.4	8.3		
Natick	3.1			13.1
Peabody	4.1	6.0		
Salem	4.5	5.9		16.4

DECLINING: 50,000 and Over

	Y25	TDOPEQV	TDOPC	IGDPGE
Group Means:	5.9 (years)	4.4%	$342	2.7%
Boston	10.3	14.0	834	
Worcester	6.7			6.9

STABLE: 10,000 to 25,000

	Y25	TDOPEQV	TDOPC	IGDPGE
Group Means:	2.9 (years)	2.2%	$279	2.9%
Millbury	4.1	5.6		
Reading	3.0			11.7
Saugus	3.5			13.4
Webster	2.9	8.5	663	

PART III.

COPING WITH THE BOND MARKET IMPACTS

CHAPTER VIII. STATE AND LOCAL STRATEGIES

In both the private sector and the public sector, when capital improvements needs are neglected, the ensuing problems are perceived only gradually and over the long term. Unlike industry, cities cannot fold or relocate when the capital facilities are worn out and obsolete. It is incumbent upon local governments to supply, maintain, and replace urban infrastructure in a continuous process that meets current needs and anticipates future demands. There is a responsibility to the future to have facilities in place as they are needed, and the municipal bond market allows the costs of such facilities to be shifted forward to the ultimate beneficiaries.

As cities and towns struggle to cope with the reduced revenue levels mandated by Proposition 2-1/2, it is likely that capital improvements will be postponed or abandoned as municipalities gear up for crisis management. Many local governments are facing several years of consecutive 15 percent budget cuts. During this transitional period, capital spending for most places can and perhaps should be postponed in the short-term until the local conditions begin to stabilize. But plans for resumption of capital spending need to be formulated quickly.

For local governments there are long-term financing strategies that will maximize the degree of local control and minimize the adverse impacts of the tax limit law. As for the state legislature, there are several decisions to be made about proposed corrective measures for Proposition 2-1/2. The key legislative proposals will be discussed briefly in the next section, followed by a section on local options.

State Legislative Options

When Proposition 2-1/2 passed in November, many observers felt that because the law is a statutory proposal rather than a constitutional amendment, the legislature would promptly pull out the teeth of the bill. On the contrary, the legislature has been very slow to change any part of the law, and communities are now planning budgets for next fiscal year that reflect the full force of the tax cuts.

The Legislature's Taxation Committee made a preliminary move on April 29, 1981 by proposing several modifications to the tax limit bill.[79] Gerald Cohen of Andover, the committee's House Chairman proposed a change that would allow communities to hold an override vote at any time that would enable the locality to postpone half of the budget cuts for one year. Current law does not permit an override vote until November, 1982. The override proposal, dubbed the "7-1/2 percent solution", would give communities the right to vote for the more gradual levy reduction of 7-1/2 percent per year instead of the required 15 percent per year reduction.

Two other significant proposals included one to allow communities to add the value on new buildings to their tax base, and another "loop-hole" allowing communities to decide by 55% approval in a referendum, to increase the tax ceiling as necessary to pay off new bond issues. These proposals would go far to neutralize the bond market impacts of Proposition 2-1/2. But there is a great deal of uncertainty still as to whether any of these proposals will be enacted.

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[79] Associated Press, "Tax Panel Moves to Ease Bite of 2-1/2", The Boston Globe, April 30, 1981, pp. 13, 16.

The legislature is hesitant about altering Proposition 2-1/2 for at least two reasons. First, the initiative passed with a very strong majority of voters supporting it, almost 60% in favor. The state representatives are justifiably cautious in taking steps that will dilute the reductions mandated by Proposition 2-1/2. It would be a mistake to presume, however, that the voters would not accept alterations to the law to make it a more balanced piece of legislation. I contend that the "message" behind Proposition 2-1/2 is directed not only at the tax system, about which voters have been grumbling for years, but it is also directed at the legislature for its unwillingness to work aggressively and decisively toward reform of a system that has long been regarded as problematic. To interpret the strong vote for 2-1/2 as a sign that the legislature should accept the bill as is rather than forge it into a reform measure, I believe is a misinterpretation of the signals.

If Proposition 2-1/2 is a rejection of the status quo, it is also an opportunity to reorder the structure of the tax system in a comprehensive, rather than piecemeal fashion. In a conversation with Mike Meyers, an analyst working for the Legislative Committee on Taxation, I asked whether the committee was likely to endorse the proposed change int the tax limit that would allow for new development to be added to the tax base, since there does not appear to be opposition to such a change from any interest group. Meyers explained that no such proposal would be endorsed by itself, precisely because it is a popular alteration. Instead, the committee would work toward a comprehensive reform package that would tie elimination of the "no-growth" aspect of the bill with

other provisions and amendments. This political strategy will leverage the support for the popular changes to improve the chances of passage for the "comprehensive" measures. Another possibility is that the legislative committee will leave Proposition 2-1/2 as is so that a comprehensive reform package that will completely replace the 2-1/2 initiative will have a chance of getting enacted. If this is the strategy, then communities will very likely have to live with the full force of Proposition 2-1/2 for some time, as the legislature plots its course.

A state level option that holds little promise, but which nonetheless warrants mention is the creation of a statewide bond banking system. Bond banks have been established in Vermont in 1970, and in Maine in 1972, to provide access to long-term credit markets to communities which have difficulty issuing debt independently due to their small size.[80] The bond bank is a statewide structure to which municipalities can apply to participate in a package bond issuance. The bank collects information from applicants similar to the data required by Moody's, and the bank can reject participation by applicants which will unduly jeopardize the issue.

When the bank has accumulated at least $6 million in finance needs, it will prepare a bond issue for 10 percent greater than the sum of the component issues. The excess funds are used as a reserve fund, (equal to one year's debt service obligations) and the income earned on this fund is adequate to cover overhead and expenses from operation of the bond bank. The security behind the issue is first the reserve fund, second the full faith and credit of the participant local units, third is a lien on state aid to the localities, and fourth the moral obligation

[80] Katzman, Martin T., "Municipal Bond Banking: The Diffusion of a Public Finance Innovation," National Tax Journal, Vol 33, No. 2, June 1980,pp. 149-160.

of the state's general revenues.

Since the "bottom line" of the debt security is the state's moral obligation, the entire issue is usually rated one rating below the state's rating. In the case of Massachusetts, which is rated 'A' by Moody's, the bond bank issue would be rated Baa, which makes it a very unattractive idea. Few municipalities in this state would have reason to participate with that low rating. While the bond bank might prove adaptable to Massachusetts, it was conceived to aid small unrated communities. Some modification would be necessary for the system to have any value in aiding fiscally squeezed cities and towns in Massachusetts. In short, the idea holds little promise as a solution to local credit difficulties.

Local Options

There are two approaches to the capital financing dilemmas that can be pursued at the local level. The first approach, especially for communities that appear to be "locked-out" of the general obligation bond market becuse of tax restrictions, is to consider alternative finance mechanisms. Unfortunately, there are not many viable alternatives from which severely impacted communities can choose. For all communities there are a number of steps that can be taken to minimize the bond rating impacts of Proposition 2-1/2. Some tips, which were offered by a town that was able to avoid a rating suspension through assertive interaction with Moody's, will be discussed below.

On May 13, 1981, the Massachusetts Collectors' and Treasurers' Association devoted their meeting to the problem of bond market access

after Proposition 2-1/2. At this meeting, Bradford H. Warner, Vice President of the First National Bank of Boston, gave his assessment of the prognosis for cities and towns seeking long-term financing. He focused in on the differential impact of Proposition 2-1/2, with the following comments:

> "Generally, what we've seen in the marketplace so far is tremendous polarization in the market's attitudes towards communities in Massachusetts. This has shown up primarily in the secondary market since there haven't been too many new issues. That polarization has taken this form: on the one hand, communities which are generally regarded as poorer credits, or weaker credits, are the ones that are going to be significantly impacted by Proposition 2-1/2. (These communities) would have a very difficult time raising long-term capital, and their bonds in the secondary market-...bonds that may be sold and changing hands among the investors- are doing so in a very, very limited way. We've seen alot of investor resistance in trading those types of security.
>
> On the other hand, however, communities that are not severely affect, that are considered strong credits- their bonds are trading very well. There is a good active market for them. In fact, we think that communities in very good, sound credit condition could probably raise capital, although interest rates are high as a whole right now. We think they'd get a fairly good reception in the bond market today- much along the lines of what Concord experienced."[81]

Prospects for the "weaker credits" in raising long-term capital are indeed bleak. If such communities cannot tempt the market with general obligation bonds, there may be other types of financing mechanisms available that will be marketable. For any project or capital improvement that can operate through user fees, revenue bonds are a viable solution. Revenue bonds do not depend upon the fiscal strength of the local government for debt security. The analyst need only appraise

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[81] Warner, Bradford H., V.P., First National Bank of Boston, Quoted from a transcript of the May 13, 1981 meeting of the Massachusetts Collectors' and Treasurers' Association, (transcribed by author).

the risks involved in operating the facility, and projecting demand for, and receipts from the enterprise to determine the level of risk involved. Revenue bonds backed by a credible projection of user-fee revenues will gain the poorer communities access to the credit markets if the project is appropriate.

Revenue bonds may provide a solution in a few cases, but they serve limited applications. In my quest for flexible debt instruments that are insulated from claims against general revenues, two finance mechanisms have emerged, but each is beset by implementation problems. These potentially useful mechanisms include tax increment financing, and special tax districts.

Tax increment financing, (TIF), or tax allocation bonds, as it is called in California, would require that Proposition 2-1/2 be amended to allow new development to be added to the tax base, for it to work. A TIF scheme is applicable to capital improvements projects for which there will be a subsequent growth in property values encouraged by the improvement.

The process begins by specifying the boundaries of the parcel of land including and surrounding the improvement site- this is called the development district. The assessed value of the property is then frozen at the value before improvements begin, and that assessment level becomes the base on which revenues collected will continue to be allocated to the city's general fund. Any increase or increment in assessed value above that base level generates tax revenues that are allocated to pay off the debt service costs of the improvements financing. Often related

non-tax revenues will also go toward the debt service fund.

One advantage of TIF is that it directly couples the capital improvement with some form of private economic development. This financing system has been criticized as a drain on general fund revenues similar to property tax rebates offered by cities to entice development. If the capital investment is of a traditionally public nature, such as streets, sidewalks, sewerage, or water, then this criticism would seem unjustified. The tax increment system is a way of earmarking property tax revenues for debt service requiements, thus insulating the revenue flow from the political pressures of the general fund. If TIF is used to finance private-type improvements, however, such as a convention center to accompany a hotel, then the revenue-loss criticism may be valid.

Tax increment financing requires state enabling legislation and capacity for growth in assessed values to be reflected in property tax revenues. The finance mechanism also requires careful and elaborate planning. There does not seem to be a strong demand for such a system in Massachusetts. Significant legislative initiative would be necessary in order to implement the TIF system.

One final possibility for financing improvements in cities is the special tax districts. A special tax district could take the form of a water, sewer, or school district, but new approaches have included the development of multi-purpose downtown districts to facilitate development or improvements within a designated part of the city.[82] These districts

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[82]Brandt, James C., "The Role of the Special Tax District in Downtown Development", Paper prepared for the American Planning Association, 1981, National Conference, April 27, 1981, Boston.

are managed by a semi-public development authority, which is given a broad mandate to improve and/or revitalize the district. The authority is authorized to levy a limited tax on property within the district, this authorization is reviewed periodically. The authority can issue bonds to achieve improvements as well. Whether a sub-local special district would be able to levy a tax on property outside of the limits imposed by Proposition 2-1/2 is uncertain. Given the strict wording of Proposition 2-1/2, it is unlikely that such a district could levy a tax that would result in the total levy increasing beyond 2-1/2.

In conclusion, there does not seem to be a finance mechanism that will resolve the problems faced by municipalities that cannot market general obligation bonds because of Proposition 2-1/2 induced fiscal strain.

Although the bond market impacts of Proposition 2-1/2 will be quite restrictive for some communities, there are steps that can be taken to make the best of a bad situation. Five local initiatives were cited in the introduction including State House lobbying, capital improvements planning and expenditure reduction planning, competant and creative fiscal management, public relations to emphasize local strengths over weaknesses, and disclosures of fiscal information to the investor community.

The proponents of Proposition 2-1/2 showed great skill in political maneuvering. Massachusetts is a state with a long tradition of political activism, and those interests who do not exercise their political muscles soon lose them. One crucial factor in the success of the tax limitation movement in 1980 was the creation of a strong coalition of interest groups- including Citizen's for Limited Taxation (CLT), The High-Tech-

nology Council, and Associated Industries of Massachusetts, to name the dominant members.

The story behind the coalition headed by CLT in the push for Proposition 2-1/2 is a good case study of the rise of a political force Massachusetts style.[83] The opponents of Proposition 2-1/2 had neither the political cohesion nor the economic resources that characterized the CLT coalition. If there is any consensus between local government interests as to what action should be taken by the legislative vis-a-vis Proposition 2-1/2, then that message must be relayed to the legislature in a politically impressive manner. Groups such as the Massachusetts Collectors' and Treasurers' Association, among others have each lobbied extensively at the State House to express the local government interest. What is necessary, however, is to build a coalition of interests comparable in strength and numbers to the CLT coalition, to impress upon the legislature that the political stakes are still high on both sides. Diverse interests such as Mass Fair Share, and banking interests representing investors can be recruited to broaden the base of the municipal constituency.

Short of re-igniting the political bonfire, however, are steps that can be taken individually by municipalities to cut their losses. Improvement of management, planning, and information flows can improve local efficiency and will favorably impress the rating analysts. The capital improvements programs of many cities will have to be re-evaluated in light of the difficulties in raising capital, and the increased interest costs. Priorities for improvements can be made more explicit, including

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[83]Tvedt, Sherry.

how an expenditure meshes with a view of the community's future. Planning for budget cuts is also very important. To avoid interagency conflict it is adviseable to initiate dialogue between the local executive and service delivery arms of the government. Steps can be taken to improve revenue collection and eliminate delinquencies in tax payments and fee collection. New sources of revenue can usually be found, such as converting from tax supported services to user-fee supported services.

The important point from the above list of suggestions is that the community that acts most quickly in response to the cuts will rebound the quickest, both in terms of stabilizing service deliveries at adequate levels and in regaining access to the credit market to continue with capital improvements. It was interesting to note at the Massachusetts Collectors' and Treasurers' Meeting how different Brookline's response was from Amherst's response to Moody's request for information about the impacts of Proposition 2-1/2.

James Lindstrom of Amherst described his strategy in responding to Moody's as a process of second guessing what the rating agency would want to know, and delivering more information than was explicitly requested.[84] Of course, Amherst was somewhat fortunate in that Lindstrom was able to demonstrate that a property tax cut would be avoided, because the town was undergoing a revaluation that reduced their effective tax rate to within the limit.

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[84]Op. Cit., Massachusetts Collectors' and Treasurers' Association, James Lindstrom.

Beyond the data requested by Moody's, Amherst communicated four main points to the rating agency. 1) because of the revaluation, the property tax levy could grow slightly rather than be cut; 2) the amount of fees for services could be increased in a number of areas; 3) a meeting between the selectmen and the School Department was held to negotiate how the limited revenues would be allocated; and 4) the vote in Amherst was against 2-1/2, so that when the override vote is eventually held, there is a strong likelihood that Amherst would vote to override the provision.

Even communities that are more adversely affected by Proposition 2-1/2 than well-off Amherst can demonstrate managerial control over the situation. It is crucial to inform Moody's that a thorough review of all the choices has been undertaken, and where cuts are necessary a cut-back process will ensure that the situation will remain under control.

CONCLUSION

The ultimate impacts of Proposition 2-1/2 for the municipal bond market will depend upon what action is taken by the state legislature. The secondary market for existing debt appears to have responded by avoiding the bonds that were issued by the most hard-hit municipalities. The cities and towns with high tax rates and a heavy debt burden are in a very vulnerable position. Many communities, such as Concord and Amherst, however, will come through virtually unscathed.

Even the hard hit cities may regain their standing in the credit markets once the revenue reductions have run their course, but some communities will face reductions for several years. Meanwhile, the infrastructure of these places will deteriorate as maintenance and replacement programs are deferred for lack of funds.

Increases in state aid will help the current account and permit more upkeep expenditures. Long-term capital, however, will remain inaccessible to some communities so long as there is no way to insulate that portion of revenues that goes to debt service from competing interests. Even distressed cities will be able to raise some capital through negotiated private placements with local businesses and financial institutions.

It is important for the future of cities to maintain an ongoing capital improvements program. Capital improvements can be deferred in the short-run, but will have to be made up for in the long-run. Declining cities will hasten the departure of residents if improvements are neglected. Growing cities face unsafe or unsanitary conditions if

facilities are not in place when needed.

There appears to be a real threat that the lack of long-term capital will gradually result in what John Petersen calls a "wasting disease" from lack of maintenance and replacement of capital facilities.[85] It is because these problems occur gradually that the effects can grow to serious levels before the public will respond with corrective action. I have tried to assess this danger prospectively, before unnecessary hardships are incurred.

[85]Petersen, John E., "Proposition 13 and the Bond Market".

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